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Prof. Konstantin Kurpayanidi

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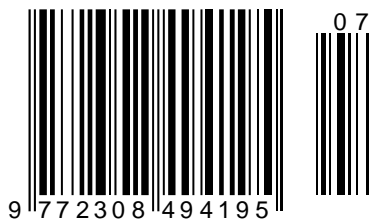
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PROPERTIES RESEARCH OF GREY CAST IRON IN CONDITION OF GRAVITY CASTING INTO A METAL MOLD

Abstract: A transition process of liquid phase of grey cast iron into solid phase when gravity casting into a metal mold was considered in the article. Properties changes of grey cast iron when filling of the metal mold with melt and its subsequent cooling are presented graphically. An analysis of residual stresses in a casting material after crystallization is given.

Key words: casting, a metal mold, melt, filling, crystallization, grey cast iron.

Language: English

Citation: Chemezov, D., Pavluchina, I., Komissarov, A., & Kanishchev, I. (2019). Properties research of grey cast iron in condition of gravity casting into a metal mold. *ISJ Theoretical & Applied Science*, 07 (75), 1-4.

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Classifiers: Metallurgy and energy.

Introduction

Casting is the most common method of manufacturing of cast iron billets of various geometric shapes. The each method of casting includes a number of the complex simultaneously occurring physical processes: hydrodynamic, thermal, crystallization [1 – 10] and etc. Castings made of grey cast iron of normal accuracy can be obtained by gravity casting. A metal mold provides multiple casting of complex in the shape of the castings. The process of gravity casting consists of two main stages: filling of the mold with melt and gradual cooling of melt before complete crystallization. Transition of liquid phase of metal alloy into solid phase (which is accompanied by

various phase transformations) is observed as a result of occurring of these processes. More accurate deformation models of the billet and melt crystallization of grey cast iron can be obtained when taking of readings from sensors mounted on the three-dimensional model of the manufactured casting. The three-dimensional model of a car piston, which has thin-walled and massive elements, was used as the researched casting.

Materials and methods

The properties research of grey cast iron when cooling in the mold was carried out by finite element modeling. The process of gravity casting of grey cast

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iron (EN-GJL-300) into the metal mold made of grey cast iron was simulated. Melt of grey cast iron was exposed by casting at the initial temperature of 1290°C. Melt was poured into the metal mold at the speed of 0.4 kg/s. The mass of the casting model was 1.279 kg. The metal mold was heated to 200°C for maintenance of heat. Melt cooling in the metal mold was performed before complete crystallization (liquid phase is zero). The computer simulation of the gravity casting process was close to the real process by specifying of gas data when filling of the metal mold with melt and convection.

Results and discussion

The calculation results are presented in a form of the dependencies of the properties changes of grey cast iron when filling of the metal mold with melt (the Fig. 1) and cooling (the Fig. 2).

These volumes of the metal mold cavities are filled with melt of grey cast iron for 3.6 s. The crystallization process of the casting was 26.611 s. The casting cooling is accompanied by decreasing of the material volume by 1.52%.

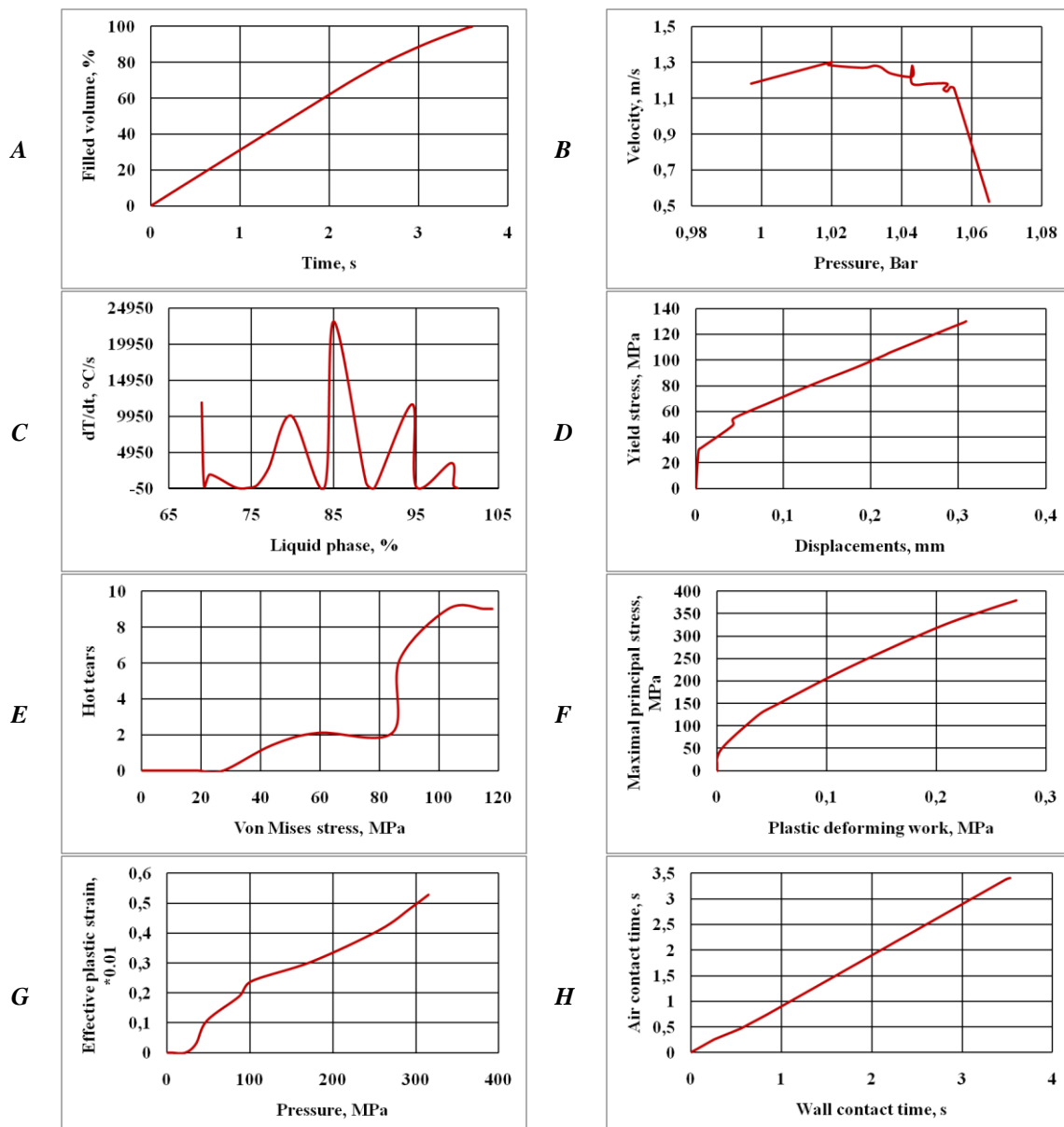


Figure 1 – The properties changing of grey cast iron melt when filling of the metal mold: *A* – the filled volume of the metal mold with grey cast iron from time of filling; *B* – velocity of grey cast iron from pressure; *C* – cooling rate of grey cast iron from the percentage of liquid phase; *D* – yield stress of grey cast iron from displacements; *E* – hot tears in grey cast iron from von Mises stress; *F* – maximal principal stress in grey cast iron from plastic deforming work; *G* – effective plastic strain in grey cast iron from pressure; *H* – air contact time from wall contact time.

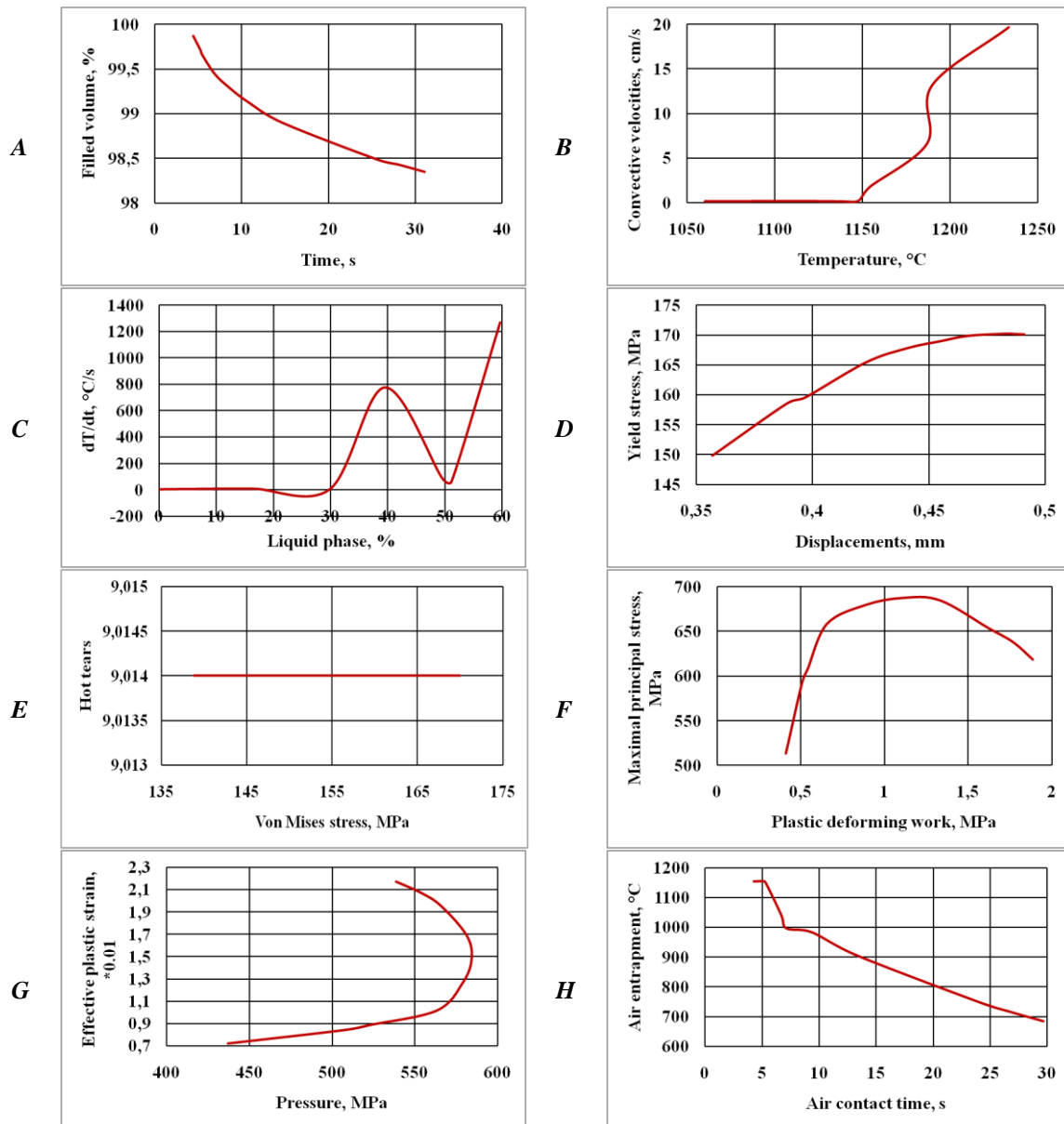


Figure 2 – The properties changing of grey cast iron melt when crystallization: A – the filled volume of the metal mold with grey cast iron from time of crystallization; B – convective velocities in grey cast iron from temperature; C – cooling rate of grey cast iron from the percentage of liquid phase; D – yield stress of grey cast iron from displacements; E – hot tears in grey cast iron from von Mises stress; F – maximal principal stress in grey cast iron from plastic deforming work; G – effective plastic strain in grey cast iron from pressure; H – air entrapment from air contact time.

Melt velocity decreases and pressure increases by 6.5% when filling of the cavities volumes of the metal mold. Convective flows in melt are observed only when cooling. Crystallization of grey cast iron occurred when cooling of melt to 200°C from the initial temperature. Melt of grey cast iron is cooled from beginning of the filling process of the metal mold. Significant jumps of cooling rate of melt are observed at 85% of liquid phase. Cooling rate of grey cast iron becomes constant in the range of liquid phase from 20 to 0%. Yield stress of grey cast iron has

maximum growth at the filling stage of the metal mold with melt. Yield stress of the casting changes by only 15% when crystallization. Residual von Mises stresses of 170 MPa occur in grey cast iron after casting. Growth of stresses when crystallization of grey cast iron changes by only 20%. Growth intensity of hot tears is observed only in liquid phase of grey cast iron from 100 to 70%. Maximal principal stress of grey cast iron increases at the filling stage and partly at the crystallization stage. Decreasing of the casting stress is observed at a liquid phase boundary

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of grey cast iron equal to 20%. Maximum intensity of plastic deforming work of grey cast iron was determined when crystallization. Residual pressure of grey cast iron in the end of the crystallization process is decreased. Effective plastic strain in material of the cooled casting is 3 times higher than in melt. Contact of grey cast iron melt with the metal mold wall lasts for 0.12 s more than contact of melt with air at the filling stage. During crystallization of grey cast iron, the air temperature in the metal mold decreases to 685.706 K, which is almost 2 times less than the temperature of the casting material.

Conclusion

The filling process of the metal mold with melt of grey cast iron is accompanied by a significant release of thermal energy and changing of the other properties. Maximum growth of stresses of various kinds occurs in a short period of time in grey cast iron. Decreasing of maximal principal stress and pressure of grey cast iron by 10% of the highest value at a ratio of solid and liquid phases of 83 and 17% was observed.

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FORMATION OF PRESCHOOL EDUCATIONAL INSTITUTIONS AND THEIR MECHANISMS OF MODELLING

Abstract: In article questions of development of national system preschool and vocational training are considered. Last years on strengthening of its legal base complex measures have been taken for development of vocational training, modernization and modernization of educational process, a number of system measures for support of target youth in achievement by them the considerable international both Republican's Olympic Games and competitions has been undertaken. Considering prospects of development of economy and priority problems, of modern technics and technological tendencies introducing modern information-communication technologies on high requirement and related specialties on work preparation of the qualified personnel possessing practical skills and knowing not less two languages. Considering real requirement, offers of the enterprises giving work, coordination of activity of professional colleges on radical improvement of quality of preparation of necessary experts. Formations and even more strengthening of modern material base of professional colleges equipped with school desks based highly effective the education- lab ware, computer technics and innovative technologies, to acceptance of the decree realization of measures of its effective utilization perfection of system of continuous formation and preparation of qualified personnel, is considered attention from the state on questions of an openness of educational services and quality.

As a result of national independence, the state is fast becoming a state-of-the-art policy-based approach to completing a full-fledged government policy.

Key words: Education system, innovative development, national education program, continuous formation, strategy of development of republic, preschool education.

Language: English

Citation: Ganiev, E. (2019). Formation of preschool educational institutions and their mechanisms of modelling. *ISJ Theoretical & Applied Science*, 07 (75), 5-8.

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Classifiers: Education.

Introduction

For years of independence the national education system and training became one of state policy pressing questions in republic. As a result of realization of the National program of training of the citizens, the Republic of Uzbekistan prepared by the First President of the Republic of Uzbekistan Islam Karimov and the world community, in the country creates unique system of continuous formation.

The president of the Republic of Uzbekistan Shavkat Mirziaev in December, 29th, indicate the reform in the school educations, on January, 25th 2018 said about measures on the further perfection of

system of an average special and systems of vocational training on the basis of perfection of system of higher education on a condition and on July, 25th 2018 year strategy of innovative development of Republic Uzbekistan.

Materials and Methods

The President of Republic Uzbekistan S.M. Mirziaev on February, 7th, 2017 said about movement on strategy of the further development of the Republic of Uzbekistan.

The decree № 4947 from the decision «about the International competitiveness of the country and

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innovative theoretical the size as the key factor in definition of progress of human reason - the Main objective of strategy of development».

Head Oliy Mazhlis said on December, 22nd, 2017 «Our great descendants of Al-Horezmi, Ibn Sina» allies unfortunately, is not enough attention to a problem of formation of the presented.

The vital value, in connection with 26th anniversary of acceptance of the Constitution of Uzbekistan works on December, 7th, 2018 from achievement, words «Standards of preparation of teachers and training methods in sphere of national education on the basis of the advanced foreign experience».

Possibility of the double should be considered from the point of view of their childhood, children ability of attention to development of all possibilities in our country, many of Biruni, Ibn Sina, Ulugbek.

The decree of the President of Republic of Uzbekistan from September, 30th, 2018 № PC 3955 «About measures on perfection of management by an education system in the future» the Most important criterion in the Road map for the Concept of management of system of continuous formation - plays a main role in this life.

We cannot achieve any changes or prosperity without personnel preparation. Preparation of such shots, the healthy and formed generation of the nation begins with preschool education system.

The preschool education system is the basic and most important part of system of continuous formation. On the basis of scientific researches of scientists and experts of 70 % of all information which the person can receive during the life, makes 5 years.

The decision of the Cabinet of Ministers of the Republic of Uzbekistan on September, 30th, 2018 «About measures on the further perfection of preschool education for 2017-2021 years». According to a road map, «Prospect and priorities of modern and innovative technologies in the country of economic development to take into consideration and the experts connected with them with great attention which they need practical skills, and also at least, it is considered to teachers of the qualified foreign languages important.

1. Perfection of a state policy and management in preschool education.

2. Perfection of system of a professional training in preschool education.

3. Perfection of procedure of reception in educational establishment by introduction of the state interactive services.

4. Financial stimulation of workers of the state preschool centers.

5. Perfection of system of medical aid to children in preschool centers regional bodies of public health services.

6. Perfection of system of preparation of a qualitative technique of teaching and didactic materials (including toys and the literature).

7. Perfection of the typical charter of educational institution, and also the typical agreement between preschool centers and parents.

Improvement of infrastructure and material support of the state preschool centers.

8. Perfection of the state preschool education.

9. Complex studying of a condition of preschool educational institutions.

10. Creation of modern preschool centers on the basis of experience of the developed foreign countries.

11. Attraction of preschool educational institutions with attraction of large managing subjects for modern preschool centers and their reconstruction: perfection of an order and norms of state financing of preschool centers and creation and perfection of the transparent centers system of safety.

12. Working out of modern standards of preschool management.

13. To provide qualitative preschool education, to introduce alternative programs of radical improvement of preschool education of children.

14. Increase in quantity of children in preschool educational institutions in countryside.

Strengthening of material base of a control system by preschool education is directed on introduction of modern educational programs and technologies to educational process, and also cardinal preparation of pupils for the future of Turkish Republic, is the most important factor of development of young generation.

In this connection 2017-2018 years in our country creative works are spent many, and on the basis of each decision the accelerated and reliable projects are realized, practical results are reached.

For example, the academician of Academy of Sciences of Uzbekistan Gulamov S.S. advanced and reliable scientific research of idea of "mental education" and «mental medicine» which brings up and develops mental faculties for development of the human capital.

It uses for an optimum solution of a problem with use of innovative methods for definition of the general and additional demand for real teachers and the teachers working in preschool educational institutions.

So, for the purpose of working out of mathematical model of the decision of problems in pedagogical shots at perfection of management by preschool centers, using the methods set forth above, we enter following characteristics.

I-zone Quantity of preschool centers quantity of the skilled teachers working in preschool educational institutions

T-year is planned

$$Ti-T * \text{increase } T\text{-time} \quad (1)$$

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Quantity of the teachers working in IT preschool centers.

Reduction of demand for pedagogical experts in the planned years in preschool centers.

On the basis of resulted above definition we develop mathematical model of a problem.

The formula of calculation of the contribution of pedagogical experts in number of the pedagogical workers working in each of 1000 state and not state preschool centers.

Will be the following [1].

$$b_i = b_i 100/a_i \quad (2)$$

The long-term forecast is based on the plan (for the period from 5 till 25 years) for number of heads of the higher educational institutions preparing pedagogical shots for preschool centers, within 1000 [2].

$$M_i = (\sum \sum (b_i + b_{ij})T - 1000) / \sum \sum a_{ij} \quad (3)$$

Proceeding from the formula, the quantity of the pedagogical experts necessary for the prospective look-ahead plan, is defined under the formula, proceeding from requirement of preschool educational institutions for pedagogical experts [2,3,4, 5, 6, 7].

$$Qb_i = b_i + (b_i + b_{iT}) \quad (4)$$

Now it is possible to define quantity of pedagogical experts which the quantity of preschool pedagogical experts and quantity of the teachers working in preschool centres is necessary to prepare on the basis of a long-term plan of definition of requirement for the qualified pedagogical experts with modern pedagogical and information technology for improvement of preschool educational institutions [8,9,10].

$$D_i = L_i - b_i \quad (5)$$

As a whole, important positively to satisfy requirement for pedagogical experts with modern knowledge for education of future intellectually aesthetic and physically developed generation.

It is a multistage problem in which the system of mathematical modeling for definition of the optimum decision with use of uniform network model is used;

That is on the basis of known mathematical instructions on optimization of the scheme of plans of preschool preparation.

Preparation of the qualified pedagogical experts is a key question in perfection of management by preschool education, preparation; retraining and improvement of professional skill of pedagogical shots play an important role in management of school education system.

Conclusion

As a result of inability to satisfy demand of pedagogical experts for their special requirements for a concrete situation it is not expected that this problem will lead to desirable result as the problem of definition of pedagogical experts is frequently difficult enough for the decision, basically it is based on pedagogical, congenital, socially to define their prospects on the future.

There are some ways to study requirement for pedagogical shots for improvement of management by preschool education, basic of which.

- Knowledge of level of availability of pedagogical experts in preschool educational institutions which is focused on dynamic and statistical factors in comparison with quantity of the formed and skilled experts with modern pedagogical and information technology in educational institutions.

- The extrapolation method is directed on definition of a salary of teachers taking into account long-term calculation on the basis of the innovative plan.

- The organization of additional annual services by the state preschool centers in target and working hours over the installed program (training on care of children and other).

It is offered to raise reception of receipts on pedagogical specialties' in higher educational institutions for preparation of the qualified experts for perfection of management by preschool centers in regions.

Strengthening of material base of 2200 preschool centers for 2017-2021 year to prepare children of 5-6 years for school education that, in turn, will improve preschool education system it is planned to create 6100 short-term groups and to prepare children for preschool education at the age of 3-6 years for preparation of their parents for methodical use.

Execution of the Decree of the President of Republic Uzbekistan №PF-5198 on September, 30th, 2017 «About measures on radical perfection of a control system by preschool education», the further expansion of the state and not state branches, creation of conditions for a healthy competition between them, partner relations, with introduction of new forms of preschool education in Uzbekistan, by means of which intellectual, physical, directed on education.

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THE COORDINATION OF COLOR AND CLOTHES IN LITERAL IMAGE (IN THE EXAMPLE OF GHAZALS BY ALISHER NAVOI)

Abstract: The article discusses meanings of colors in ghazals by the great poet of Uzbek literature, Alisher Navoi in the coordination of various clothes. Certain colors used as a symbol deepened the meaning of the poem in which the lyric hero's clothes were analyzed to play a great role. Likewise, literal features of the poet are expressed with some examples.

Key words: Navoi, color, clothes, symbol, fetish.

Language: English

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Classifiers: Literature.

Introduction

The lyrical hero is the epitome of the culture, era, morality, philosophy and spiritual world of his time. Any lyric character of other poets in Uzbek literature was not equal with the one of Navoi in the situation where he or she encircled all his / her surroundings. More than 60 kinds of clothes which are worn by men and women were given as examples. They are **abo**, **ablaq**, **abrishim**, **volo**, **dalq**, **dabbog'**, **debo**, **diklay**, (sometimes "dakla", "dekla"), **doroyi**, **elak**, **yopuq**, **javshan**, **janda**, **joma**, **jubba**, **jul**, **jiba**, **zarkash**, **iskun**, **kapanak**, **katon**, **kish**, **kejim**, **ko'ktemur**, **lihof**, **loya**, **moshob**, **muraqqa'**, **os**, **oltoyi**, **parand**, **parniyon**, **pashmina**, **po'stin**, **pesa**, **rido**, **sayfur**, **saqarlot**, **sinjob**, **tanpo'sh**, **tiyin**, **to'rqa**, **o'rmak**, **xirqa**, **xil'at**, **xafton**, **shol**, **shirdog'**, **qoqum**, **qumosh**, **qabo**, "harir", **hulla**, **yopuq**, **chakmon**, **chopon**, **chorqab** and so on.

Materials and Methods

There were a number of adjectives describing the hero's position and his / her mood. For instance, in order to make a shape the mood of a beloved who was in trouble in separation, the poet used the following word combinations "sariq hulla", "xazoniy kivat",

"sarig' libos", "sarig tun". You can see them in this poem:

Ul sarig' to'nlug' turganda ta'zing'a tik,
Shu'lakim, xoshokni kuydurgali bo'lg'ay biyik.
[2. 227.]

Yo. Ishoqov wrote in his book called "the poetry of Navoi" which was devoted to the poet's lyrics: Moreover, the abovementioned couplet is typical to be an example of the art "tamsil" likewise, it was proved that in the first line of the poem a beloved girl was ready for bowing and a real occurrence happened in the latter one. [7. 127.] the man who was in sorrow about separation was compared to be made to fall in love more by a beloved girl in a yellow robe. The word "Biyik" has its dictionary meaning like "big, great, steep"

Ey Navoiy, **kisvati** gar obgundur, ne ajab,
Bu yaqindurkim, bo'lur suv ichra durri shahvor.
[3.137.]

This is other different description: the clothes of the beloved girl were in water color. For this reason its name was "kisvati obgun". He was not surprised at her dressing so because "durri shahvor" was not also

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on the ground but it was in the water. It can be said that her appearance was taken into consideration in that poem.

Hullayi kofirgun ul xil'ati xazro uza,
Sabzai jannatqa go'yo tushti rahmatdin qirov. [1. 343.]

The appearance of the girl who was dressing in a green (xazro) robe with white (kofirgun) silk underwear was drawn an analogy with white hoarfrost leaving on the grass of the paradise.

Sometimes clothes of women and girls amazed people with their various glutei shining colors. It is not difficult to realize in this following couplet that such gilded clothes expressing seven colors in the rainbow have a long history:

Yetti rang debon zarkordin,
Mukallal qilib durri shahvordin [3. 312.]

The poet emphasized that "**Debo**" was a delicate silk dress and was decorated with seven colors. At that time pearls were attached on it.

Navoi described a certain appearance of the moon in order to express the beauty of the beloved.

Mehrig'a ko'kta shafaq xo'p ermas andoqkim manga,

Moviy terlik uzra ul oyning **qizil shirdog'i** xo'p. [4. 40.]

The contrast of the moon and redness of the sun increased the sensibility of the symbol, and give a sense of excitement to the feeling it created. A blue underwear (терлик) and blue (осмон), red shirdog' and redness of the moon could give charm to the image of hers.

Different - color appearance of the moon depended on her clothes. Having been embarrassed to see the beauty of the beloved in a well - suited, surprisingly beautiful, red, black and blue dress, the moon became redder, sometimes turned black with envy, but it was blue with being desirous.

Qizil yoxud **qora yo ko'k** to'nung har bir mavzun,

Nechukkkim, **oy libosi** ham **shafaq**, ham **kecha**, ham **gardun** [1. 203.]

The beloved tried to hide her face with the sleeve of her dress but it could not be obstacle, contrarily, it caused her to be more charming, it is not surprising because clouds are not able to cover the sun.

Qizil ko'nglak yengin orazg'a yopsang vajhi yo'q voqe',

Quyosh ollida ko'rmaydur kishi gulgun bulut mone' [1. 203.]

At beginning of the article we said that the red color, clearly must be told, a red silk dress had a positive effect in the relation between a man and a woman. However, this color did not always express good mood, position and aim all time as well as all situation. A red costume of the king and sultan indicated anger and indignation, even bloodshed. Navoi said so about it:

To'kti qon **gulgun libosun** kiygach ul xo'plar shahi,

Qon to'kar emish **qizil to'n** kiysa, beshak, shohlar. [3. 136.]

The word "xўб" means "beautiful" so we can understand this word combination "xўблар шoҳи" like "the king of beauty" When he was in red costume, in people's mind, he became a murderer of the beloved. Why? Because, according to ancient traditions, there was bloodletting when kings wear his red robe. the historian informed about it in his work called "Ajoyib ad-dunyo": "... Turkish people called their kings like "xokon". His throne, crown and waistband were made from gold. Turkish people had silk clothes. According to the legend, their kings seldom met with their people. There was a day when people built special great fire to express their respect for their king. When the king looked up at the fire above, the priests began praying for their king and a great figure rose up at that time. If it was in a red image, there would be abundance, white meant drought, red indicated bloodletting. Yellow was illness, black prophesied the death of the king and a long journey. Alisher Navoi may not have been aware of this information accurately but he heard of them in the legend.

The following ghazal beginning with matla' of Mashrab indicated us that Navoi inspired greatly his young generation who were in creative work.

Zebo sanamim **gulgunu zebo** yasanibdur,
Qonimni to'kar, buki **qizil to'n** kiyinibdur. [9. 185.]

According to Islom conviction, martyrdom is thought to be a great status At God. A martyr is buried without shroud, it may be said, with his / her clothes. One of the kings, Sulton Alp Arslon and his soldiers were in white wears when they started a battle besides, they put white cloth on their horses. Intending to be a martyr, they started the battle. In the following lines of the couplet by Navoi, a lyric hero said that he intended to be a martyr and to be buried with his clothes which were in blood because of his beloved's fascinating eyes and quite beautiful dress. The word combination "ma'hudi kafan" was used like "a usual shroud in tradition", in short, a corpse was expressed to be wrapped up with a white cloth as usual in the second line.

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Loladek qonliq libosim birla dafn aylang meni-
Kim, shahidi ishq ma'hudi kafang'a kirmadi. [1.
437]

Or:

Shahid o'lsam **libosi lolagun** sarvi ravonimdin,
Yasang qabrim uza mile, bo'yang **gulrang**
qonimdin. [3. 383]

We analyzed some couplets in which clothes and colors were expressed in the above-mentioned lines but we shall look through the whole ghazals in the following lines:

To'rt rangi muxtalifdin **hullakim**, jonon kiyar,
To'rt unsur **kisvatidur** go'yoyokim jon kiyar,

O'zbeki gulnori to'ndin kuydum, ammo
o'lturur,

Limuyi terlik aning ostidakim jonon kiyar.

Ikki yonimni shikof aylapturur bu rashkim,
Ikki yonidin shikofin bog'lamay **qapton** kiyar.

Gul bila **savsan** katon yanglig' bo'lur mahtob
aro,

Ko'nglaki **gulgun** elak chun savsani kattoni
kiyar.

Oraz uzra sho'xlig'dinmu yopar **sanjobini**,
Yo'qsa **sanjobi** bulutturkim, mahitobon kiyar.

Har chubulg'an toridur sarishtayi izzu sharaf,
Eski sholekim, fano ko'yida bir uryon kiyar.

Gar Navoiy **jandasin** shoh oldi, tong yo'q,
chunki ishq

Poku beg'ashdur, gadoning **kisvatin** sulton kiyar.
[2. 132]

It is not mistake, without doubt, to call this ghazal like "**a dressing-room**" because there are descriptions of more than 10 wears like **hulla, kisvat, robe, limuyi, terlik, qapton, katon, kunglik, sinjob, shol, janda** whose colors are not similar to each - other.

This ghazal was originally included in the collection of "Navodir un-nihoya", then in "Navodir ush-shabob" of "Xazoyin ul-ma'oniy". It is true that the lyric heritage of the poet was full of colors and clothes and there were more than 30 ghazals which were created in the coordination of the two ones. However, it is a rare phenomenon not only in Uzbek ghazals but also in the east poetry history to create a lively portrait and image with a help of four colors and 10 different clothes at a time. For this reason researchers of Navoi poetry paid great attention to it. For instance, giving his opinion about this ghazal Yo Ishokov divided it 4 types (description, expression, praise and commentary). He stated that it was included in the type of ghazal of "Vasf" and preferred to give the first two-couplet example. N. Jumaxujav gave a

description of six things included in the ghazal which belonged to mahzuf of musamma with rama: **hulla** (an ornamented, fine fabric-sewn clothing), **o'zbeki gulnori tun** (a red robe made a cloth with pomegranate flower), **limuyi terlik** (a yellow underwear), **katon** (a cloth woven from string), **qapton** (an ornate robe), **sinjob** (a robe or cloak made of lynx and squirrel skin). The poet used the name of different clothing: **kisvat** (a clothing), **elak** (a light sleeveless wear), **shol** (a cloth woven from wool), **janda** (a clothing of dervishes).

To'rt rangi muxtalifdin hullakim, jonon kiyar,
To'rt unsur **kisvatidur** go'yyoyokim jon kiyor.

The first verse of this ghazal's matla can be interpreted in two ways, The beloved was dressed in four different colored ornamented delicate dress. "Four colors" in the ghazal can be imagined the coordination of any four colors because thousand colors made from the mixture of seven basic colors of the nature (**red, yellow, green, blue, white, black, light blue**) were used to describe the image. The latter one meant was that the beloved had in four different colored dress whose colors were cleared in the next couplets. In the second lines Navoi created his ghazal with a help of religious, philosophical outlook in which God made of the human by the means of four essential elements. The word "жон" in the ghazal was explained to give such meanings in the explanatory dictionary of works by Alisher Navoi: 1. Spirit, existence, life; 2. Body and eight different meanings. So the poet used the word "жон" as the meaning of "body". We know the body of the human-being was make up of four elements: soul (black), water (blue), fire (red), wind (yellow). the Greek philosophies, Empedokl and Demokrit stated that these four elements meant four essential colors and they indicated those ones: black, yellow, red, white (according to their imagine, the color "white" meant "water" but we used it like "blue, light blue"). Therefore, there are four colors which are contrast to one-another. Soul-wind, water-fire and their matched colors (black-yellow, red - blue) are concepts in the center of the couplet and the colors of the clothing which the beloved dressed are explained according to the concept.

O'zbeki **gulnori to'ndin** kuydim, ammo o'lturur,
Limuyi terlik aning ostidakim jonon kiyar.

We can not accurately describe what robe "O'zbeki gulnori to'n" was but there is no doubt that it was a delicate, beautiful and elegant one. Being much more attractive in robe made up of a cloth with a pomegranate flower the girl made her beloved fall in love because of her yellow underwear. Her beloved was so sorrowful in separation that it was difficult to

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distinguish between her dressing gown and his faded body in love.

Ikki yonimni shikof aylapturur bu rashkim,

Ikki yonimni shikofin bog'lamay qapton kiyar.

“qapton” in the second line of the couplet was a robe worn after binding with a threat through the both sides and the beloved became much more impressive and grandiose in this clothing. It led her beloved to falling in love a lot harder and seeing that beauty he began to be jealous of even his eyes. Consequently, that distress destroyed him completely.

Gul bila savsan **katon** yang'lig' bo'lur mahtob aro,

Ko'nglaki **gulgun elak** chun savsani katton kiyar.

Let us imagine “kanop” (the green stalk plant) which is growing and wrapping itself around a flower in the moonlight. The sleeveless dress sewn from a cloth with flowers (елак) and “katon” woven from a thread (a green dress) are similar to the image which we imagined above. The elegant girl was in a fine green (савсаний) “katon” and a sleeveless red dress.

Oraz uzra sho'xlug'dinmu yopar **sanjobini**,

Yo'qsa sanjobi bulutturkim, mahitobon kiyar.

The completely different image were described in this lines of a couplet. The beloved fascinated her captive hiding her face with the sleeves of her dress as the few of clouds which sometimes appeared in the blue sky covered the moon.

Har chubulg'an toridur sarishtayi izzu sharaf,

Eski sholekim, fano ko'yida bir uryon kiyar.

This couplet was connected with the internal world of the hero. When was "a old shawl" worn in the ancient time? When the human gave up all opportunities of life devoting himself only to God he / she could be in this one. In their mind, this shawl was not woven from the thread but from the bonds of esteem. (the human loving God becomes a real respectful person at God) Researchers who learn Sufism stated that the person who chooses this way to live has to be in this clothing and explained why this shawl must be old. According to the scientist A. Kurbanmamedov, the desire of the person being in worshipping to wear in beautiful clothes is a great obstacle to reaching Allah because they intensify feelings of desire, greedy and nervousness and lead to satisfaction of the physical pleasure which make the human to avoid true truth. [8. 17.] Likewise, it was written on page 26 in the band "A'rof" of the holy book "Qur'on" so : "Human-beings, we sent you clothes to

hide your body, besides ornamented clothes but you must know that the best ones are for worshipping." Worship is the base of religion. The person who has real love for Allah gives up all impressive and grandiose ornaments and must be in casual clothing.

In the end we shall the last couplet of the ghazal:

Gar Navoiy **jandasin** shoh oldi, tong yo'q, chunki ishq

Poku beg'ashdur, gadoning **kisvatin** sulton kiyar.

Conclusion

Like other poets, Navoiy paid great attention to the distinctive feature of "eski shol", "xirqa", "janda" because they lead a real beloved to staying without bias. For this reason not only the impoverished but also kings, sultans had a feeling of necessity.

It is clear in the book "Satrlar silsilasidagi sehr" by N. Jumaxo'ja that the clothes of the ghazal belonged not only to the beloved but also the lyric hero especially, the clothes like "eski shol", "janda", "kisvat" written in the last two couplets . [6. 167.]

YO. Ishoqov indicated the description of several items (yog'liq, xil'at, maktub) of the poet's several ghazals and said that they performed the function of detail, emphasizing the peculiarity of poetry so he called it poetic fetish. [7. 59.] In each line as a lyrical hero, appearing in a new variety of colored dresses, the reader will be able to get acquainted with the rich spiritual image and the traditions of our ancestors who lived in the past. In several ghazals of the great artist, it is clear that the color symbolism is a necessary tool for the secret of women and girls in the 15th century and finding the artistic expression of the level of esthetical dress code. The state of love and affection will be understood in the couplets, first of all, by means of clothing that belongs to them. If the girl was going to have a feeling of happiness, negligence or to dress clothes which expressed her beauty, the contradictory clothing, therefore, spiritual state was specific for the beloved. However, this contradiction was a necessary thing to interconnect psychological states of the couple who are in love with each-other in the context of their relationship with the cause and outcome.

The clothing is the essential detail of the psychological image because it expresses spiritual state and happenings. In addition to this, its type and color indicate on what level the hero is in love. Therefore, in the lyrical style, the clothing and literal intent which its color describes in the image are the definition of the purpose. The internal essence of the image takes shape with the help of his / her clothing as well as its color, allowing its structure to be correctly understood with the intent of the author.

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ISSUES OF SCREENWRITING GENESIS IN ORAL FOLK ART

Abstract: The article examines the screenwriting genesis issues on the example of "Alpomish", the rare folk epic of Uzbek folklore. The poetic text of the folk epic was scientifically analyzed, based on the method of intermediality. Also in the context of folklore and film studies it was appealed to the meaning of epic poetry which was skillfully created by an unknown author some centuries ago. So, it was tried to prove that the features of screenwriting genesis can be studied from the oral folk art.

Key words: Intermediality, genesis, screenwriting, folk epic (doston), script, cinema, semiosphere, art, literature, folklore, myth, producer, screenwriter, actor, bakhshi.

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Classifiers: Literature.

Introduction

Nowadays the attitude to the eternal heritage of traditions in the territory of the Republic of Uzbekistan has expanded the field of folklore research. Although oral folklore had been widely studied and is being studied on a wide range of literary works: mythological, biographical, comparative-historical, psychological, sociological, comparative, theological methodology, but the issue of synthesis process, interacting or mixing of verbal texts have not been studied in Uzbek literary and art criticism.

In the course of our time there exists an environment in which the scientific laws formed over the centuries have been regained and intellectual changes are inevitable. In this sense, searching for screenwriting stereotypes from the folklore, and checking the closeness between folklore and contemporary art is not just a demanding approach to the object.

Materials and Methods

In present time the method of intertextuality and intermediality, which serves as an important methodology in the field of interest and new research

of humanitarian sphere, shows that the ancient roots of audiovisual art can be searched in folklore.

The scientists M. M. Bakhtin, Yu. Kristeva, J. Derrida and R. Bart have proved that some kinds of art have intermediality features when compared with literature, painting and musical works which are included in one type of arts. According to Russian researchers, the origins of various synthetic genres or forms on the basis of world literature and their syncretism (literature-music, literature-fine arts, literature-architecture, etc.) have always been of interest to the people of antiquity. In the twentieth century, the problem of synthesis of art from ancient times has led to the category of coevolution in the research - the method of intermediality [1,2].

It is a legitimate necessity for man to understand, express, and strive to reflect the image of others in imagination. And in the stages of civilizations history, the most complex and strongest need was to express an action, and its actual result has created the ancient art. The art of speech has become the easiest and the most complex tool to create an image of the movement.

When studying the state of development of artistic creativity in different periods Veselovsky said,

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“... It turned out, finally, that the drama existed long before the epic and, moreover, with a completely epic content: an example of this is the medieval mysteries and folk games that accompanied the annual festivities and were distinguished by a completely dramatic character”[2].

The Russian folklorist V. Propp studied the preservation of drama laws in the initial motives in the context of mythological poems even before the antiquity despite the historical changes. The conclusion of this scientist from the study of fairy tales genesis is: there are unchangeable motives, plots, similarity of images, in some places there is repetition, and even development of drama is the same in the content of different peoples' fairy tales [3].

Having considered the findings of folklorists' studies (on folklore) and their conclusions, we have decided to study myths, people's games, fairy-tales, folk epics, folklore and written literature in general which are the resources of screenwriting on the example of the folk epic “Alpomish”.

The main criterion for screenwriting/cinematography is the textual expression of reality. In the scenario consisting of plot puzzles, the idea of an author can be justified by the fact that it is adapted to screen. In fact, the writer, the dramatist, still expresses their world outlook and thoughts only by means of the word both in antiquity and today. And it is known that screenwriting is closest to literature than any other art. According to researcher B. Albertacci, who studied the ancient roots of the scenario structure “The main feature of the script is ‘watching’, ‘the main characteristic of which is the word ‘moving’. B. Albertacci continues: “That is exactly how Italo Calvino writes about his ‘imaginative cinematographer’ in his “American Studies”. “This imaginative cinematographer” always lives within us. It was before the movie appeared and never ceases projecting the images of our inner world”[4].

The folklorist Propp emphasizes that scientific studies of folklore should not be related to geographical location, nationality or race. In his opinion, “Folklore is an international phenomenon. There are no artificial borders for us”[5]. Taking into consideration this idea of the scholar we take into account the idea of structuralism scholars that “the world is textual”. According to modern scientist “As any kind or form of knowledge, art and literature having their specificity consisting mainly in reflecting the personality of the artist through the means of art, with the help of its peculiarities. In this way, the phenomenon of the art creation is regarded as just as the work itself, as utterance (part of utterance) or, in other words, act of communication. Considering that there are various expressions at the disposal of different art, the issue focuses on coding or re-coding of various semiotic systems, which are the works of literature, art and culture in general”[2].

In the middle of the twentieth century, the adherents of this idea claimed that the text is a concentration of culture composed of all types of art and events close to it. Particularly, the text is a musical, visual arts, architecture, sculpture, fashion and overall life. Based on this direction, Yu.M. Lotman proposed the concept of semiosphere. In his opinion, the semiosphere is a special environment, including culture and all sorts of art.

Historically, the term intermediality is used in the scientific study of literature, philosophy, art, and many other areas, is not a novelty. If the study of screenwriting specific reserves in the folklore can be explored in the context of intertextuality and intermediality, hypothesis-based thinking can be easier. Though these terms seem to be a modern approach today, at the beginning of the 19th century, the term “intermediality” has been widely accepted. Today, intermediality is a specific structure of the text and it is understood as intermediary in the mixing of various arts. There are several types of intermediality in this regard.

The issue of the existence of sources (elements) of screenwriting in folklore is very close to the “normative intermediality” direction. This is because the initial state of a plot in regulatory media is examined in different media [1]. Accordingly, the relationship between the folk epic “Alpomish” and literature is a form of intermediality. The historical roots of national folklore and the folk works of one people can have similar motives in other peoples folklore, including the history and genesis of the folk epic “Alpomish”, a number of versions or verses of the epic, and the origins of this phenomenon were described by Uzbek and foreign scholars [7,8,9,10]. Particularly the professor V.M. Jirmunsky wrote in his article “The epic poem “Alpomish” and Homer's “Odyssey” epic poem” [11] about stages of Odyssey and Alpomish adventures, considered the comparative-historical and genetic traits of similar motifs. However, this study of the folk epic “Alpomish” on the basis of national and world literature is not enough to determine the synthetic factors of a poem.

We have the right to say that, when people have overcome the stages of expression from the primitive age to the present day, and to the fact that the artistic thoughts are reflected in different arts, they are always evolutionary, and that screenwriting is a manifestation of the highest step of folklore staircase. The point of view of scientific hypothesis is that it is neither studied nor dealt with as a concrete scientific thought. However, it has been studied that the folklore motifs, plot, image, composition, and ideology hidden in the oral folklore are reflected in various aspects of screenwriting. For example, scientists Zorkaya N.M., Fedorov V.M., Nefyorodov E.A. based on the World School of Folklore have attempted to prove that the fairy tales motifs are reflected in contemporary

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interpretations of film plots. According to V.M. Fedorov, every great film has fairy tale motifs [14]. It is possible to see the oral folklore system in the screenwriting and that such naturally formed laws exist in the folklore of the world, and that this infinite desire to visualize the imagination has given the ability to visualize images of humanity in the verbal text.

It is well known that the film-script is a literary work that forms the basis of the mass arts. During the creation the author, besides taking into account the stages of the verbal textual version, should take into account the fact that the product is presented to the public and hundreds of people will see the work at one time. At the same time, it is based on the laws of screenwriting based on the audience perception psychology. During the creation of folklore, it was important for verbal text singing or reciting, for what it was dedicated and where the most important audience was involved in the creation of folklore and improvisation. Thus, in the samples of works created on the basis of ancient traditions, the drama system began to form spontaneously. At first glance, the use of dramatic art for oral folklore can seem somewhat unbelievable. But when remember the meaning of the Greek word drama as movement, it is understood that in every folklore example, man's movement and his activity have been reflected, and that it serves the purpose to entertain and amuse the public, wherever it is created.

On the other hand, various forms of folklore such as folksy humor, puppet shows, folk tales, singing, bakhshi art, and so on remind the genre of synthetic manifestations of today's screenwriting.

The epic work "Alpomish" was narrated by Fozil Yuldosh-ogli, and Makhmud Zaripov wrote it up. When we studied the short version of this epic work prepared for publication from the point of view of screenwriting rules we have concluded that it meets all the requirements of screenplay. The basics of screenwriting are:

- 1) moving sound image,
- 2) composition,
- 3) plot,
- 4) integrity of image,
- 5) idea,
- 6) conflict,
- 7) editing, (or montage),
- 8) frame,
- 9) mise en scene,
- 10) framing,
- 11) perspective (foreshortening),
- 12) plan (projection),
- 13) detail (image detail),
- 14) light and shadows, like an unknown author creates the image from these components by the rules of screenwriting.

In the work as the folklorist Propp noted the "unchangeable fairy tale motifs" have found their

proofs and have been reflected. In particular, in the first lines of the folk epic, the author wrote, "In the past, in the country of sixteen kungirat the man named Dobonbiy was born. Then a son of Dobonbiy named Alpinbiy was born. Alpinbiy had two sons: the elder one was Boybury, and his younger son was named Boysary. Boybury and Boysary grew older. Boybury was rich, and Boysary was a shakh, and these two were childless"[15]. It would be as if the speaker is ready to talk about some mysterious events, and his listener is in calm state and mood. According to Propp's systematized law, the motive of the first condition was mentioned, and in the development of subsequent events the bakhshi narrates that these two men were mocked for childlessness at the big wedding, but the consequence of this was good.

The mythological, religious, and realistic motifs of the plot versions of the epic poems that came to our epoch are combined. Many folklorists explain these reasons in different way. In particular, in his work T.Murzaev said "the intervention of Muslim saints in giving the name to Alpomish and the determination of the path of his might (a magic prayer), shows that the ancient motifs were later transformed according the dominant ideology" [7]. Although we do not deny the existence of truth in these statements, we note that the evolutionary development of society has transformed the traditional principles into a form of art, and that the fairy tale motifs become modern in order to increase the credibility of the listener. L.N. Nekhoroshev, a researcher who studied the film drama, wrote: "Folklore has appeared in the mythological images of the world, but over time, folklore works have lost their magic and legendary character. From the legendary ones the motifs of folklore are distinguished with triviality and commonplace of life character. This enhances their involvement in art more than legends" [12].

The miraculous expression of the folk epic heroes' power, especially that Alpomish won the ninety strong men and he is compared with "sword-fire", "burning fire", "bullet-proof" legendary body of the tale-like giants and dragons, but his mind, kindness, loved heart are expressed in the image of a cultured human being.

Here is the opinion of folklorist J. Eshankul: "The appearance of epic heroes Alpomish, Basat, Gurogli, Avaz, Nurali, Ravshan and so on reminds us the image of dragon, and it is not without a purpose. It is true, the giant is a symbol of great evil, and strong men basically are to carry out good deeds. However, this is not the diversity of functions, but it is the unity of these characters genesis" [13].

The epistle of the miraculous power of seven-year-old Hakimbek is as follows: "... At that moment, Hakimbek, a seven-year-old boy, threw fourteen boots in his hand and pulled it off. The arrow of the pale horizontally rolled up the cliffs of the Askar Mountain, and its voice went into the world" [15].

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This brief content of the reminder is the essence of the work. The important point is that bakhshi - narrator does not express his subjective opinion on both the events and the images. Different aspects of the various forms and characters are described in the monologue or dialogue in different ways. It is possible to imagine that the singer performed the part of each hero, and in front of the audience he used different words and sounds to act as Boyburi, Boysari, Barchin, Alpomish, Qorajon and Surkhayil.

Conclusion

Even though we did not find any information about bakhchis' (bards) entering into the image, we should pay attention to the opinion of Omonulla Madayev, who has been studying folklore for many years: "There is still now the performance of the folk epic – doston - to the accompaniment of dombra,

singing songs, poetry fragments. ... If the bards of Kashkadarya, Surkhandarya and other parts of the region are used to sing with dombra adding different modulations in their voices, the bards of Gurlan, Khiva, and Urgench perform the doston with a whole voice" [10]. The reason we pay attention to the performance of bakhchis is that the folk epic "Alpomish" is dramatic in its composition, in the development of the plot, in the collision of images, space and time interchange, in the completeness of dialogues and monologues. Only the talented bakhshi, who has the ability to play and improvise with the content of the folk epic masterpiece, can attract the attention of the spectator for a long time and create the essence of the poet's own imagination without giving any subjective judgment to the events. So, in the exaggerated manner, bakhshi has been the author, the director, and the actor.

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MORAL ASPECTS OF NATIONAL ETHNIC IN BRINGING UP YOUNG GENERATION WITH GENEROSITY

Abstract: The article philosophically investigates the place of Uzbek national values as the basis for the development of society. The role and place of moral principles in education of youth in the spirit of tolerance are scientifically trained. The issues of effective use of national values in the development of culture of generosity among young people and views on improving the moral ideal are also considered.

Key words: National values, moral principles, education and upbringing, art, culture, philosophy, worldview, national idea and ideology, tolerance, people, nation, society.

Language: English

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Introduction

While understanding ourselves, setting up spiritual heritage, attitude to customs and traditions which inherited from our ancestors have been totally changed, thanks to independency. In the society, moral aspects are paid great attention in developing national value. By the way, nowadays, only the person who is absolutely spiritually wise and generous can understand the value of humanity, inter-humanity and nations, in general, self-awareness, live in independent society, fight to take social status in that society. In our country, it is totally necessary to bring up youth considering spiritual and moral aspects in their education and upbringing as well as invent their hidden abilities.

The implementation of such tolerance with ethical principles in educational system is an important issue. The head of our state, Shavkat Mirziyoyev, said: "It is well known that the upbringing of the younger generation has always been important and actual. But in the twenty-first century, this issue is becoming a life-and-death problem. "The more perfect the discipline, the more people will be happy," said the wise. It is absolutely forbidden to be free from this problem"[1]. Indeed, the youth is the future of the country, the trust of the country, the

continuation of the nation. Therefore, the essence and significance of the ongoing reforms in our country, in many ways, will ensure the future of our future, the future of our young people.

Moreover, it is important to educate them with knowledge, experience which is helpful in comprehending social development combining with knowledge of our ancestors. Above all, it would be better if some humanitarian features are constituted including improving the feature of generosity in the mind of youth, honoring traditional customs in their behavior. According to philosophical observation, traditional value is generous features including freedom, safety, social equality, truth, beauty, goodness happened in nature and real life, which all of them are considered to be essential for humanism. Therefore, values of typical humanity consist of spiritual wealth which is appropriate for all concerned people and have the same root with national values. The person who appreciates the world of beauty never gets separated from it. In bringing up people, especially, youth with traditional values and moral behavior are important aspects. As Farabi stated that: "The purpose of being human – to get luck and happiness; first of all, the person should know what is happiness and from what things does it consist of , in

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order to get it what kind of purpose does he need and should follow this aim with his whole body” [2].

Materials and Methods

Attention of young generation on spirituality, the view of being complex person is increased and influenced in developing national values. This serves the safety and development of country, improvement of culture. Thus, in each era, spirituality effects positively on the mind and heart of people. The reason why it is seen that the process of developing of society gets moral improvement step by step.

During the years of independence, special attention was paid to studying moral-ethical and national values, raising the culture of tolerance for young people. During the conversation with a group of historians on June 26, 1998, the first President of our country I. A Karimov, said: "As long as the people who know their history and who receive spiritual strength cannot be defeated, then we must restore our true history and we should arm our nation"[3]. Inspiring by these words the historians has put in a difficult and honorable task to reveal our true national history, to restore the culture of our ancestors with high tolerance.

From history we know that in the society and the state, the importance of the idea of interethnic harmony and tolerance is not understood, there are various conflicts and problems in the life of the society and the state, which endanger peace and stability. Today, we also see equal opportunities for representatives of different nationalities living in our country, especially religious tolerance, as a state policy, and strengthened legally. The Head of our state Shavkat Mirziyoyev's speeches and lectures are the main principles of spiritual and moral upbringing of young people, ensuring inter-ethnic and inter-religious peace, support for tolerance. "It is well known that in our ancient and generous land for centuries representatives of different nationalities, cultures and religions have been living in peace. Hospitality, kindness, generosity and genuine tolerance are always inherent in our people and form the basis of its mentality "[4]. At the same time, today young people account for 60% of the country's population. We all know that this is a great power. In this regard, we can see that the formation of tolerance and moral upbringing in young people has led to a state policy.

As our first president I.Karimov said: spirituality is a un-interrupted ongoing process and by its fast development the requirements also appears steadily[5]. It is politically significant to make spiritually educated person as well as nowadays its mentioned to create cultural, esthetic, legal inner characters to people. The president of republic of Uzbekistan Shavkat Mirziyoyev had a speech in the 24 th of anniversary of the constitution of Uzbekistan: we have to bring up our children by ourselves. For that

we have to communicate with our children, listen to their hearts, to allow them to share their concerns[6]. That all procedures are followed by our national cultural traditions

Our president Shavkat Mirziyoyev highlighted the major role of behavior and education in the society by saying that: we have to make special conditions for children, to build new educational establishments, cultural and sport complexes, to establish apartments for young families, to implement new vacant position for adults, as well as we have to uplift our economic position in a high status. We are obliged to put in a first step all behavioral and educational functions[7]. That above mentioned behavioral functions is a key to improve the esthetic, political, economical, social and cultural characters for our upcoming generations.

From the history we know that the Uzbek people have taken seriously the issue of raising a healthy child from ancient times. For example, children were brought up by the nannies who had moral-ethical, national values, or by mentors-educators with great reputation in science and education. It is said in the "Qobusnoma": "If you teach your child a job and a bounty, and every science teacher teaches you to learn, you are anxious, and your younger son learns to steal knowledge and spell, and does not learn by his own free will. But if the child is embarrassed and you are angry with your son, do not do it, and the teachers are afraid of the rod. Let the children teach adultery, so that your son may not be ashamed. We can see that the education of young people has long been paid attention to the idea that it is a legacy to teach a child a profession"[8]. As it is clear from the above, Oriental intellectuals have always been positive about the upbringing of young people.

At the initiative of President Sh.M.Mirziyoyev, the Strategy for Action in five priority areas of the Republic of Uzbekistan for 2017-2021 has been developed. The fourth priority direction of the Strategy is "Improvement of social protection and healthcare system, increasing the socio-political activity of women, the creation of cheap housing, road-transport, engineering- development of programs for the development and modernization of communications and social infrastructure, education, culture, science, literature, art and sports. and improving the state youth policy "[9]. In this regard, the current state of education and science, the implementation of the state youth policy, the introduction of new forms of education, including the introduction of modern information and communication technologies, are being raised to the level of state policy. Today, in our country, the work is underway to bring up the youth in the spirit of moral and ethical values, upbringing of the spiritual, mature and harmoniously developed generation, protection of their rights and freedoms.

In this process, ethical research is one of the main tasks of modern education system, which is

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directed to moral upbringing of the younger generation, enrichment of their moral world and artistic aesthetic taste. It is also worth mentioning that ethical research is needed to address any kind of "mass culture" and to deal with threats such as "fetish ethics" and "market art." In all educational institutions, students are taught about the purity of nature, the welfare of the society, the beauty of the human being, the internal and external morals of the human being, and the formation of a moral world.

One of the main factors in shaping the moral outlook for young people is the spiritual and educational activities held in these educational institutions, various activities with young people, as well as visiting tourism, historical monuments of the city, beautiful sites, as well as buildings and premises built on the basis of urban development. The formation of ethical consciousness and ethical consciousness in young people is important in reaching a mature human being in their competitiveness.

In general, ethical and aesthetic education is in harmony with each other. Because human beings often experience life as a perceiving and ethical act of art. Let's say you have traveled to "Samarkand Tour" in Samarkand. If you are unaware of aesthetic, you are pleased to look into the dome of the Gur Mir-mausoleum, the towers near the madrasah in Registan, and the ancient Arabic inscriptions on the porches. If you are aware of the morality of science, then it is not only the beauty of the dome, but also the symbol of God's beauty, that it is called "Jamal", the minarets are "jalal" as a symbol of God's power, remember, that the signs, the sign of God, are called "quality", and the impression you have is multiplied several times. We understand not only the beauty of what we see, but also its philosophical essence through the moral mind. That's why it is wrong and harmful for a farmer or a railway businessman or an entrepreneur to come to terms with ethics[10].

In educational institutions, spiritual activities are aimed at conducting according to their content and essence on the basis of national values. It is important to educate the youth as who are fit our society, component, intellectually mature, physically strong, aesthetic, tailor-made, full of thoughtful ideas, independent thinking, contributing to rise and development of our country, as a citizen who understands the essence of radical reforms underpinned by a decent place in future transformed into an economically advanced state in the world. The main attention is paid in policy of state in the issue of individuals who follows the rules of morality, has high spiritual ethical qualities, feels his/her responsibility to society, state and family, understands internal and external politics of the state, is patriotic and humane,

enthusiastic, with modern knowledge and high human quality, strong will, purely religious and faith-conscious.

The Strategy for Action for Renewal and Development of Uzbekistan has been a theoretical basis for all economic, social, ideological processes and reforms and has led to the growth, renewal and development of social activity of young people. This concept was a model of new and original conceptual basis not only for the socio-historical experience of nation and country, but also in the social practice of youth activity by Sh.Mirziyoyev. At the same time, the concept of promoting young people's innovative thinking has played an important role in revealing the social essence of ethical thinking. This concept, on the one hand, opens wide opportunities for the youth to have a role as an active social layer in the world community and on the other hand, the young people become the professionals they want. In the process of social development, social activity, which is based on the spiritual world of every nation, ethics, legal culture, philosophical heritage, political mentality and rich traditions play a special role.

They, in turn, will help to preserve the historicity and authenticity of the social environment and to encourage young people to have their own "me". The goal of a legal democratic and civil society is to educate youths with a high moral culture in our country. Therefore, we are proud that our youths are rightfully able to take on the responsibility for the future of our Motherland and become a decisive force of our present and future [11].

Conclusion

By the way of conclusion, all educational institutions play an important role in educating youths on the basis of national values. It is a sensitive process for their pedagogical community to deeply integrate national ideology into the minds of young people, their ethical thinking, their moral sense and outlook. We must absorb the significance of ethics for human at the spiritual and educative activities, in the birthday of great individuals, in the national holidays held in educational institutions. We are living in the world, in which proliferation of crimes and illegality among adolescents by some bad powers, struggling for the mind and souls of humanity. In this process, in the meetings that held for prevention of terrorism, religious extremism, dogmatism, missionary, in political lectures, all of us should pay attention the shaping of youths' ethical outlook, eminence of their moral thinking. Our main ambition in this spiritual and educative activities, is to pay more attention to the rich historical and spiritual heritage, national and international traditions, national culture, ethics and aesthetical education.

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THEORETICAL BASES OF STUDYING THE GNOSEOLOGY OF CENTRAL ASIAN PHILOSOPHY

Abstract: This article deals with the research of scholars of western Europe, Iran, the former Soviet Union, Russia, Uzbekistan, and the United States, studying the gnoseology of Central Asian scientists and philosophers, and each researcher's method of studying their ideas about Central Asia, particularly Ibn Sino's philosophical heritage and theoretical foundations.

Key words: gnoseology, kalâm, Bayt al-Hikmah, peripateticism, religion philosophy, tafakkur.

Language: English

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Introduction

The ideas of the book of Avesto in Zoroastrianism, the views of the Buddhists who had once lived in Termez, and, of course, the ideas of Islamic doctrine and the Greek philosophy of reasoning can be clear examples of the gnoseology of Central Asia. As our research focuses on the X-XI centuries, the philosophical ideology of the Muslim world and its unique ideas are to be represented. In study of this region the researches of scholars from Western, CIS (Commonwealth of Independent States) and Muslim countries are extensive. Of course, the approaches to the study of gnoseology in this region vary, so there are differences between Western and Muslim researchers. While former Soviet philosophers often criticize western schools, their methodology is almost identical to Western methodology. We cannot clearly answer the question of how the school of the Muslim philosophy is, because we do not have a good philosophical school. It is true, the Iranian scholars and Egyptian researchers' works are great. However, as far as the philosophy is concerned, the West comes to mind first. The fact that "philosophy belongs to the West" means that there are still many confusions in this area.

What is our approach here? Gnoseology – learning the philosophers of the Muslim world should include the principles of ontology with the explanation of the Qur'an and its interpretation, the interpretation of the hadith and, of course, the knowledge of Kalâm (a study of the Word). Not only Arabic language and its grammar, but also the ideas of Islamic religion and its spirit will help deepen philosophical interpretation. Only then we will begin to understand the spiritual richness of our ancestors, and this can be the basis for bringing up the future generations with patriotism and a sense of loyalty to the country.

Materials and Methods

In the study of gnoseology of Central Asian philosophy, the scholars from the CIS countries are the followings: M.S.Asimov, N.Baratov, M.N.Boltaev, A.D.Djakhid, Yu.D.Jumaboev, M.Dinorshoev, A.K.Zakuev, A.X.Qosimjonov, S.K.Satibekova, E.A.Frolova, M.M.Xayrullaev, Stepanyants, A.Sagadeev, G.B.Shaymukhambetova, A.Sharipov and others.

As far as the philosophy of Central Asian gnoseology in X-XI centuries is concerned, Avicenna (Ibn Sino) and Beruni's philosophies can be vivid

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examples. The Soviet philosophy school of that era attempted to prove these geniuses as materialists and religious critics as possible. One of them, the Oriental scientist A.Sagadeev, argues that medieval Muslim philosophy – peripateticism opposed to the dominant ideology.

Was there any dominant ideology? There are those who take advantage of these ideologies. If the role of the government in Bayt al-Hikmah's construction during the period of Khaleefah Mamun as well as in learning the greek philosophic heritage is considered, the above mentioned idea would be contrary that it is possible to say the dominant ideology has become the embodiment of peripateticism.

He also notes that in the Middle Ages the Catholic scholars-neotomists more interested in philosophy of Europe. The works of E.Jilson, L.Garde, J.Verbeek, M.Asin, Palasios, R.Arnaldes and A.Korben are clear examples of this.

Sagadeev claims that according to the above mentioned scholars, the basis of Avicenna's doctrine teach the Jewish tradition of the transcendent concept of God or the types of natural mysticism and intellectual gnosticism, and that Ibn Rushd was considered as the defender of the Holy Koran and fikh (the law of islam) supporting the ideas of peripateticism.

Here the concept of transcendental divinity is a controversial matter to the Judaism and requires a deeper insight into the theories of Avicenna who deeply understood the doctrine of Islam. On the other hand, as talking about the Jewish tradition, Sagadeev pointed that the concept of determining the God came from Vedanta and Judaism to philosophical cosmology at first. In fact, Avicenna who wrote explanations to the Surahs of Holy Koran mentioned that he described the God with his true qualities. With his points he rejected to continue Jewish tradition.

Based on the views of other philosophical historians, Sagadeev who supported the ideology of the Soviet era, researchers from the Commonwealth of Independent States described the success of Arab-Muslim philosophy, Avicenna, Ibn Rushd and other Eastern peripatetics as an opposing direction to the dominant religious ideology.

In the study of Central Asian philosophy, in particular, Muslim philosophy, it should be mentioned that the ideas of Western researchers who mainly focused on Europe influenced to the main conclusion. The Greek philosophy, which has a great influence on the rational thinking of the Arabs, is perhaps the sum of several viewpoints. Are not the Greeks interested in the ideas of the Iranian people, the doctrine of Zoroastrianism, the views of Vedas and the Buddhism?

The analysis of European ideology in the history of philosophy in Central Asia itself goes to Avesto. Ancient Greco-philosophers such as Solon, Socrates,

Fales, Aristotle, Plato, Heraklit, Democritus, later Western scholars – Anketil du Peron, X.Bartolome, M.Boys, I.M.Steblin-Komensky, J.Klein, J.Dyushen-Giemen, X.Humbax, Goethe, Dante, V.B.Hehh analysed the Avesto. Therefore, Avesto influenced greatly to their philosophical views.

In our opinion, he (Alexander Makedonsky) was with his teacher-adviser (Aristotle) in all his occupational battles. Because in Aristotle's views and philosophical doctrines, as many other ancient Greek philosophers, have the influence of Avesto[2,p14-16].

Indeed, Alexander Makedonsky and his teacher Aristotle used this unique heritage of Asia, and the pages translated into Greek were so useful for the people of that period. Plato says: We, ellenes, try to own everything that we have taken from barbarians, and emphasize their priority [3, p-987].

But as Western researchers refer to Oriental philosophers, they point out that they have served as bridges.

In particular, Gegel notes in his book "Religion philosophy" that the main part of the Eastern peripateticism is to comment on the Greek ideological thoughts. He sees the true sense of Oriental thought in mutakallims' pantheism.

Later on, this concept was developed by E.Renan: only mutakallims, that is, the original Arab intellectuals were totally against the Greek philosophy, and believed that the Greek philosophy was determined after the domination of "The Persian spirit" (by Abbasiys) over Arabic. However, a confusion appears, if those who learn the study of Kalām are called as mutakallims, Abu Hanifa, Moturidi, Abul Hafs Nasafi were Turk or Persian. It is not true to call only Arabs as mutakallims.

French Oriental scholar Anry Corben notes that this philosophy does not belong to "Arab"s but it belongs to "Muslim"s. He also emphasizes that some ideas based on Europe can be found in the study of Muslim gnoseology.

"The evolution and the essence of philosophical thoughts in the Islamic world can only be clear if the views of European philosophy are not considered. Also, the terms of "philosophy" or "philosopher" in Muslim world do not have the same meanings as in real philosophy".

The French researcher A.M.Guashon proves in his fundamental work namely "The difference between existence and availability in Avicenna's doctrine," mentions that the medieval views such as "Avicenna did not differentiate between the essence of things and their existence" are not true.

Ulrikh Rudolph claims: "But when it comes to Moturidhi, there is less risk than the works of other scholars, because his thought is a unique example of learning new theories through various synthesis ways of gnoseology".

Thus, it is the school of devotion which has experienced its conversion in two completely

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contradictory theories over nine centuries. However, the principles of the philosophy are clearly explained in the book "Kitab as-Savod al-A'zam"; another one was revealed in the works of Abu Karram. The main aspects of his doctrine were kept in Makhul an-Nasafi.

However, the general characteristic of these texts is that the author's religious faith is shown directly. This, in turn, differentiates the whole tradition from the book "Kitab At-Tavhid" that was later seen. There is no mention of only the distinct religious faith with its expression and boundaries. Now it goes about speculative theology. This means that, along with Moturidhi and his work, Movarounnahr entered the history of Kalâm at first.

This difference is more seen in its ways. Moturidhi was not only concerned with emphasizing the doctrines of other scholars with traditional descriptions. He tries to justify the matters that he is talking about with knowing and understanding. Whenever possible, he tries to refer the ideas of some scholars with others'. Any of his predecessors in Mavorounnahr attempted to do this before. He achieved this because of his unique method which was not used by anyone before. He had an epistemology, that is, a theoretical knowledge, with which he analyzed his thoughts and understood various sources of knowledge and then spoke about them [4, p-361].

American researcher Frederick Starr calls IX-X centuries of Central Asia as a "golden age": there were several ways for Central Asia's great scholars achievements in the "golden age". These are deduction, logical argumentation, intuition, experiment, and observation. Moreover, Starr mentioned that Avicenna studied the rational foundations of religion in theology.

Frederick Starr's research style was of a great interest to us. In his words, he gave a high appreciation to Oriental ideology and studied all the facts in detail. But it can be understood that he used "western research" style. For example, as he comments on Beruni and his work "Osor ul-baqiya," some of his views seem to be controversial: Beruni was more interested in identifying the period of the year. As Beruni believes, there are mistakes in the Hijri year, in which he praised the fact that the ancient Egyptians calculated even seconds in detail.

About "Turks who do not like tafakkur", he says: There is a hypothesis that the collapse of the science and philosophical crisis in Central Asia related to the Turks' visit. Accordingly, development in Central Asia is connected with the civilization in the East of Persia. The Turks lived a few centuries before the disappearance of tafakkur. The supporter of these views was the Russian historian Bartold. Maybe this is not about Turks, but about their nomadic actions. Bartold was considered to be against to the nomadic culture of the Turkish people's advanced logic and mathematics [6, p-48].

Some aspects of Islamic philosophy, its formation, the influence of Greek culture, complete human ideas, logical views, especially the views of Avicenna and Ghazali and other compatriots such as M.Khayrullaev, Fayzullaev, M.Abdullaeva, R.Nosirov, M.Kodirov, X.Aliqulov, M.Boltaev, M.Usmonov, A.Sharipov, R.Bahkadirov, A.Zokhidiy, M.Jakbarov, D.Fayzihodzhaeva who partly studied the problems of philosophy help to clearly understand the gnoseology in Islamic philosophy.

After the independence of Uzbekistan, our religious-national values were restored and opportunities were created to study the philosophical views of Islamic philosophers. The contributions of Medieval Uzbek scholars in the study of the Islamic philosophical foundations are great. In this regard, N.Komilov, N.Ibrohimov, Z.Islomov, A.Mansur, A.Hasanov, U.Uvatov, U.Alimov, A.Djuzdjoniy, M.Hasaniy, Z.Munavvarov, Sh.Sirodjiddinov, M.Imomnazarov, S.Akylov and other scholars' contributions are remarkable.

In the East, the studies of Islamic philosophy have improved greatly and are still improving. For example, the Faculty of Islamic Philosophy at the University of Cairo of the Arab Republic of Egypt annually hosts international conferences on various issues of Islamic philosophy and is publishing collections of conference materials. Some of the Egyptian philosophers as Muhammad Sharkavi and Ahmad Arafat al-Kazi made lectures about Islamic gnoseology [7-8, p-93].

Dr. Lutfi Jum'a analyzed the views of Islamic philosophers. Iranian Islamic philosophers are also making important researches. For example, one of the most important researches in Islamic philosophy, the translation of M.Fahri's "History of Islamic Philosophy" was published in Persian by Nasrullo Pur Jawadi in 1983 in Tehran [9, p-320]. Scientific research on Islamic philosophy has also been carried out in the Republic of Turkey. Among them prof. I.Abdulhamid and prof. M.Bayrakdar's monographs play a special role. Sayyid Mohammad Khatami, an Iranian scholar, as he speaks about gnoseology in Central Asia, mentioned three major trends in "The Role of Ideology in the Civilization of Islam".

The ideological and contemporary development of Islamic civilization continued under the influence of three important trends, they can be referred to as "tosharo" (the word shari'a), Sufism and Rationalism [13, p-45].

The glorification of the "second teacher of Islamic philosophy" is that he worked hard and created such a system of tafakkur that only a commentary on his ideas would be required. In any case, why it should be called as "second teacher" is that he used the "philosophy" in various fields of education and in practice created Islamic philosophy" [13, p-69].

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Indeed, an Iranian scholar highly appreciates Farabi. It is a great news that he called Farabi as the founder of Islamic philosophy. However, in his work, the study of the history of philosophy seemed as clarifying the political purposes of Shiite rulers.

Conclusion

Considering above mentioned points we can come to the following conclusion:

1. There are proofs to call our geniuses, Avicenna and Farabi, as the founders of "Islamic philosophy".

2. It has become obvious from the researches that Iranian scholars and Indian researchers' contributions are great in learning Avicenna's theological thoughts and his Tafsir books.

3. As for Avicenna's gnoseology, it would be better to study the Tafsirs of Koran, the hadiths as well as Arabic texts in learning the gnoseology of the Islamic theology.

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INTEGRATING ONLINE COUNSELING SERVICES WITH JUST AI CONVERSATIONAL PLATFORM

Abstract: This article is devoted to the integrating of Zendesk Chat (Zopim), Webim and Bitrix24 online consulting services with Just AI Conversational Platform (JAICP) chatbots platform. A brief description of the subject area, an overview of the technologies necessary for the integration and the main points of the software implementation are presented. The conclusion describes the testing of the results.

Key words: chatbot, Just Ai Conversational Platform, Zendesk Chat, Webim, Bitrix24.

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ИНТЕГРАЦИЯ СЕРВИСОВ ОНЛАЙН КОНСУЛЬТИРОВАНИЯ С JUST AI CONVERSATIONAL PLATFORM

Аннотация: Данная статья посвящена интеграции сервисов онлайн консультирования Zendesk Chat (Zopim), Webim и Bitrix24 с платформой для создания чат-ботов Just AI Conversational Platform (JAICP). Представлены краткое описание предметной области, обзор необходимых для интеграции технологий и основные моменты программной реализации. В заключении описано тестирование полученных результатов.

Ключевые слова: чат-бот, Just Ai Conversational Platform, Zendesk Chat, Webim, Bitrix24.

Введение

С каждым годом популярность чат-ботов только возрастает. Все больше компаний использует возможности виртуальных помощников для самых различных целей: для составления заказов клиентов, ответов на их вопросы и выполнения множества других рутинных задач обслуживания. На фоне такой популярности, многие компании разрабатывают специальные платформы, позволяющие более удобно и быстро разрабатывать чат-ботов для самых различных целей. Целью нашей работы была интеграция сервисов онлайн

консультирования Webim, Zendesk Chat и Bitrix24 с Just AI Conversation Platform (JAICP).

Чат-бот, виртуальный помощник (англ. chatbot) — это компьютерная программа, осуществляющая диалог с пользователем через текстовый или голосовой интерфейс [1]. Боты позволяют значительно сэкономить средства компании, так они могут общаться с миллионами пользователями одновременно, что позволяет не нанимать большое количество людей в службу поддержки. В 2018 г. в России начался активный рост рынка чат-ботов, поддерживающих технологию NLU (Natural Language Understanding,

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понимание естественного языка). Согласно оценкам Business Insider [2], уже к 2020 году около 80% компаний будет использовать чат-боты. По прогнозам Just AI [3], по итогам 2023 г. объем российского рынка чат-ботов достигнет 33 млрд. руб. Такой высокий темп роста рынка чат-ботов с технологией NLU можно объяснить ранней стадией его формирования. Первыми компаниями, которые заинтересовались этим рынком, стали IT- и телеком-компании: доля проектов в денежном выражении в 2017 г. составляла 44%. Далее все более активно начали внедрять речевые технологии банки, страховые и финансовые компании. По итогам 2018 года их доля составляет 28%. Одной из особенностей российского рынка чат-ботов является низкая активность мировых игроков, так как далеко не все их продукты поддерживают русский язык.

Принцип работы чат-бота

Всем чат-ботам приходится работать с естественной речью пользователя. Правильно понять и обработать естественный язык, особенно разговорный стиль, — очень сложная задача. Для решения этой проблемы существует отдельный раздел искусственного интеллекта и математической лингвистики, который называется обработка естественного языка (Natural Language Processing, NLP). Этот раздел изучает проблемы компьютерного анализа и синтеза естественных языков. Применительно к искусственному интеллекту анализ означает понимание языка, а синтез — генерацию грамотного текста.

Так как чат-бот является интеллектуальной системой, он содержит свою базу знаний. В простейшем случае, база знаний — это множество возможных вопросов пользователя и соответствующих ответов бота на них. Наиболее популярные методы выбора ответа — следующие:

- Полное совпадение фразы пользователя с фразой из базы знаний;
- Ключевые слова. После анализа текста программа выявляет ключевые слова и, основываясь на них, определяет более подходящий ответ;
- Анализ контекста. Также выбор ответа зависит от предыдущих ответов пользователя. Ответ на одну и ту же фразу может быть различным в разных частях диалога;
- Анализ других факторов. Чат-бот может обращаться в другие сервисы, чтобы выбрать более подходящий ответ. Например, бот может обратиться к социальным сетям, чтобы попытаться собрать более полную информацию о пользователе.

Чат-боты имеют множество преимуществ по сравнению с обычными людьми. Бот может параллельно общаться с большим количеством

пользователей одновременно, и, следовательно, пользователю не нужно ждать, когда освободится реальный человек. Чат-боту не нужно отдыхать, и он может общаться с пользователем 24 часа в сутки. Также виртуальный помощник может в разы быстрее анализировать вопросы пользователя и давать ответ, особенно когда для ответа нужны дополнительные вычисления или обращения к сторонним ресурсам.

Несмотря на все преимущества чат-ботов, у них также есть и существенные недостатки. На сегодняшний день искусственный интеллект еще не развит до уровня человека, и поэтому зачастую бот не может правильно понять пользователя и дать ему интересующий его ответ. Поэтому зачастую у современных чат-ботов есть возможность переводить диалог на реального человека, в случае если он не знает, как ответить пользователю.

Каналы общения

Общение пользователя с чат-ботом может происходить через различные каналы общения. Список самых популярных каналов общения:

- мессенджеры (Telegram, Viber, VK, WhatsApp и др.);
- сервисы онлайн консультирования (виджет на сайте или в приложении);
- социальные сети (Facebook, Вконтакте, Одноклассники и др.);
- голосовые ассистенты (Яндекс Алиса, Siri и др.);
- умные устройства (Яндекс станция, Amazon Echo, Google Home);
- телефония.

Сервис онлайн консультирования (онлайн консультант) — это сервис, который позволяет компаниям встраивать в свой сайт или мобильное приложение чат поддержки. Он может быть представлен в виде виджета или части интерфейса самого продукта.

Такие сервисы имеют множество преимуществ:

- возможность быстро дать посетителю помощь в текстовом виде, что избавляет пользователя от звонка по телефону;
- удобное приложение для операторов;
- сохранение данных о пользователях и истории переписки в базе;
- возможность оценки качества сервиса и диалога с оператором;
- настройка внешнего вида виджета;
- ведение статистики;
- интеграция с социальными сетями и мессенджерами.

Платформы для создания чат-ботов

Платформа для создания чат-ботов — это сервис, позволяющий просто и быстро создавать

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чат-ботов различного уровня сложности. Зачастую, с помощью такого сервиса, для создания бота пользователь не должен обладать навыками программирования. Важной характеристикой хорошей платформы является возможность работать с различными каналами общения как с единым интерфейсом. Это означает, что пользователь может реализовать

одного бота и подключать его к разным каналам коммуникации.

Так как нашей целью являлось добавление новых каналов общения в платформу создания чат-ботов JAICP, мы провели сравнительный анализ различных платформ относительно поддерживаемых каналов общения. Результаты исследования можно посмотреть на рис. 1.

	JAICP	Dialogflow	RASA	Botkit	Amazon Lex	IBM Watson	LUIS + MBF	ChatFlow	Chatfuel	Pandorabots	ChattyPeople	Botsify	Beep Boop	Facebook MP	FlowXO	Smooch	botmother	Chatgun	Dexter	gupshup	
Веб-виджет	+	+	-	+	-	+	+	-	-	+	-	-	-	-	+	+	-	-	+	+	
Facebook Messenger	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+
Alexa	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
Skype	-	+	-	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-	+
Slack	+	+	+	+	+	+	+	+	-	+	-	-	+	-	+	-	-	-	-	+	+
Telegram	+	+	+	-	-	-	+	+	-	+	-	-	-	-	+	+	+	-	-	-	+
Twitter	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	+	-	-	-	+	+
Viber	+	+	-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-	-	-	+
VK	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	+
WhatsApp	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	+
Instagram	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Google Assistant	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Google Hangouts	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
Microsoft Cortana	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
Yandex.Alisa	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livetex	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Webim	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zendesk Chat	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bitrix24	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Одноклассники	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
SIP	+	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+
Kik	-	+	-	-	+	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-	+
Line	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	+	-	-	-	-	+
Twilio	-	+	+	+	+	-	-	+	-	+	-	-	-	-	+	-	-	-	-	+	-
Mattermost	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rocket.Chat	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cisco Spark	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cisco Webex Teams	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
Cisco Tropo	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Intercom	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Рис. 1. Сравнение поддерживаемых каналов у различных платформ

Выводом, полученным в результате этого сравнительного анализа, является то, что ни у одного из конкурентов нет поддержки сервисов Zendesk Chat, Webim и Bitrix24, интеграцию которых мы собрались осуществить.

Краткий обзор технологий для разработки.

Выбор технологий играет очень важную роль при разработке современных веб-приложений. Так, правильно подобранные технологии могут значительно сократить время на разработку и поддержку программного продукта. В этой главе мы сделаем обзор основных технологий, которые используются для разработки веб-приложений и которые потребуются для реализации интеграции выбранных нами сервисов онлайн

консультирования с платформой JAICP, и выберем наиболее подходящие для реализации нашей задачи.

Выбор языка программирования - очень важная задача. От этого выбора зависит весь остальной стек технологий. Существует большое количество языков, на которых можно написать веб-приложение, но в результате сравнения наш выбор остановился на языке программирования Java.

На чистом Java можно написать практически все что угодно, но современные фреймворки позволяют значительно сократить время и простоту разработки. На сегодняшний день существует множество Java фреймворков для создания веб-приложений. После анализа существующих фреймворков наш выбор

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остановился на Spring Framework (или коротко Spring) — универсальном фреймворке с открытым исходным кодом для Java-платформы. Spring — это семейство проектов, которые осуществляют конкретную функциональность. Благодаря Spring, разработчик приложений может пользоваться широким спектром инструментов с открытым кодом, не занимаясь написанием больших объемов кода и не привязывая создаваемое приложение слишком тесно к какому-то конкретному инструменту. Например, Spring Data обеспечивает взаимодействие приложения с данными: реляционными и NoSQL базами данных, key-value хранилищами и т.п., Spring Security помогает реализовать безопасность приложения и многое другое [4]. Spring Boot является проектом на уровне IO Execution (уровень выполнения) IO Spring Framework. Он позволяет намного легче создавать приложения на Spring, так как неявно выполняет многие конфигурации, которые требует Spring. Он не использует кодогенерацию, не использует XML для конфигурации, все конфигурируется через аннотации, но, если необходимо, можно с легкостью поменять конфигурацию по умолчанию для более специфической настройки [5]. Spring предлагает широкий спектр классов, предназначенных для поддержки создания веб-приложений. Благодаря Spring, разработчик получает максимальную гибкость при выборе способа реализации пользовательского интерфейса для веб-приложения.

Наиболее популярным шаблоном, который используется при разработке веб-приложений, является MVC. В последних версиях Spring постепенно развилась от простой веб-платформы до полноценной реализации MVC. Spring Web MVC — это оригинальный веб-фреймворк, построенный на API-интерфейсе Servlet и с самого начала включенный в Spring Framework. Он оперирует понятиями контроллеров, маппингов запросов, различными HTTP абстракциями и т.п.

По сравнению с другими фреймворками (например, с JSF) преимуществом Spring MVC является ориентированность на запросы. Это более четко реализует паттерн MVC. На наш взгляд, когда разработчик четко понимает, какие запросы и куда отправляются со стороны клиента, это приводит к более рациональному проектированию приложения и к более оптимизированному и быстрому коду. Серверный и клиентский код лучше разделяется.

В качестве инструмента сборки проекта мы выбрали Maven. По сравнению с другими инструментами для сборки приложений (например, Gradle) он более легок в освоении и является более популярным среди Java-разработчиков.

Технологии, необходимые для интеграции с сервисом Zendesk Chat

API сервиса Zendesk Chat задействует несколько необычных технологий для подобных сервисов, а именно протокол WebSocket и GraphQL [6].

WebSocket (стандарт RFC 6455) — это протокол связи поверх TCP-соединения, предназначенный для двунаправленного взаимодействия сервера и клиента в реальном времени. С помощью этого протокола можно отправлять сообщение на сервер и получать ответ без выполнения HTTP запроса, при этом этот процесс будет событийно-управляемым [7]. Протокол WebSocket состоит из двух частей: рукопожатие (handshake) между клиентом и сервером, а также последующая передача данных. После того, как клиент и сервер отправили свои рукопожатия, и в случае, если они прошли успешно, начинается передача данных. Это двусторонний канал связи, где каждая сторона может отправлять данные независимо от другой стороны. Клиент и сервер передают данные в концептуальных единицах, называемых сообщениями. Сообщение может состоять из одного или нескольких кадров (frames). В текущей версии протокола (RFC 6455) определено 6 типов кадров.

Зачастую поверх WebSocket используется протокол STOMP (Simple/Streaming Text-Oriented Messaging Protocol). STOMP — это простой протокол обмена текстовыми сообщениями. Основан на фреймах по образцу HTTP. Фрейм состоит из команды, необязательных заголовков и необязательного тела. Использование STOMP поверх WebSocket позволяет более удобно осуществить двунаправленное взаимодействие между сервером и клиентом.

Также необходимо помнить, что хоть протокол WebSocket и приносит новые возможности, он поддерживается далеко не всеми браузерами. С учетом того, что приложение должно продолжать работу с пользователями, в браузерах которых поддержка WebSocket отсутствует, понадобится задействовать какую-то запасную технологию для максимально близкой эмуляции желаемой функциональности.

Такой технологией, например, является SockJS. SockJS — это библиотека JavaScript, которая предоставляет объект, который имитирует WebSocket. SockJS предоставляет последовательный кросс-браузерный API Javascript, который создает полнодуплексный междоменный канал связи с низкой задержкой между браузером и веб-сервером, с WebSocket или без него, в случае если браузер не поддерживает WebSocket.

GraphQL — это язык запросов для API и серверная среда исполнения для выполнения этих

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запросов к вашим данным. Является проектом с открытым исходным кодом, разработанным компанией Facebook. Он создавался как более эффективная альтернатива REST, для разработки и использования программных интерфейсов приложений [8].

Эта технология имеет множество отличий от REST:

- Синтаксис GraphQL позволяет запрашивать именно те данные, которые необходимы, игнорируя ненужные;
- Синтаксис GraphQL является сильно типизированным. Это дает возможность до исполнения проверить правильность запроса в рамках системы типом этого синтаксиса;
- При работе с GraphQL необходим только один API endpoint - URL - для обращения к API.

Синтаксис GraphQL позволяет выполнять множество видов запросов. Стандарт GraphQL набирает популярность. В рамках опроса State of JavaScript, проведенного среди JS-разработчиков, более половины респондентов указали, что слышали об этой технологии и хотели бы с ней ознакомиться, а пятая часть уже её использует и не намерена отказываться. Если верить этому тренду, GraphQL ожидает активное развитие [9].

Технологии, необходимые для интеграции с сервисом Webim

Интерфейс взаимодействия сервиса Webim является типичным примером реализации REST API. REST (Representational State Transfer) — архитектурный стиль взаимодействия клиента (приложение/сайт) с сервером на основе протокола HTTP. Обычно все взаимодействие с сервером сводится к четырем операциям, которым соответствует конкретный HTTP метод [10]:

- 1) получение данных с сервера (GET-запрос);
- 2) добавление новых данных (POST-запрос);
- 3) обновление существующих данных (UPDATE-запрос);
- 4) удаление данных (DELETE-запрос).

Все необходимые данные передаются с помощью параметров запроса, либо, в случае POST и UPDATE запросов, с помощью тела запроса. Одной из особенностей REST является то, что сервер не запоминает состояние пользователя, т.е. необходимо в каждом запросе отправлять идентифицирующую информацию, посредством заголовков или параметров запроса.

Технологии, необходимые для интеграции с сервисом Bitrix24

Bitrix24, аналогично Webim, также реализует REST API для интеграции со сторонними сервисами. Для обеспечения безопасности Bitrix24 использует протокол OAuth 2.0 [11]. OAuth - открытый протокол авторизации, который

позволяет предоставить третьей стороне ограниченный доступ к защищенным ресурсам пользователя без необходимости передавать ей (третьей стороне) логин и пароль. Этот протокол является очень популярным для осуществления авторизации и его используют большое количество сервисов. Он позволяет клиенту получить доступ к API от имени конкретного пользователя конкретного портала. Для сервера авторизация - это указание на то, что пользователь дал доступ приложению, приложение предоставляет свой секрет. Портал это всё объединяет и выдает приложению соответствующий тип доступа.

Некоторые детали программной реализации

Общим для всех интеграций является интерфейс ConfigurableChatService, который содержит общие методы для управления ботами и каналами. Этот интерфейс содержит такие методы как processHuman(String token, T request), который обрабатывает сообщение пользователя, написанное в каком-либо канале связи, addBot(String accountId, ChannelChatConfig config) который вызывается при создании канала, и так далее. Также общим для всех каналов является абстрактный класс BaseAsyncAdapterService, который реализует интерфейс ConfigurableChatService. Для каждого канала будет реализован класс <имя_канала>ServiceImpl, который будет определять необходимые методы этого интерфейса и абстрактного класса. Это позволит при работе с каналами в других частях платформы не завязываться на конкретной реализации.

Первым шагом для реализации интеграции с сервисом Zendesk Chat является создание классов моделей данных. API Zendesk Chat принимает и отправляет данные в формате JSON. Spring Framework включает в себя библиотеку Jackson, которая позволяет преобразовывать текст в формате JSON в Java объекты и обратно. Правила преобразования можно указать с помощью аннотаций. В большинстве случаев, это преобразование Spring может осуществлять неявно, но, когда нужно выполнить преобразование вручную, можно воспользоваться методами класса ObjectMapper. Также для удобства в своем проекте мы использовали библиотеку Lombok. Она позволяет не писать конструкторы классов, методы получения и установки полей, а также другие методы. Достаточно указать соответствующие аннотации, и тогда, в процессе компиляции, библиотека сгенерирует необходимые методы автоматически. Например, аннотация @AllArgsConstructor создает конструктор класса, в котором аргументами являются все его поля. Для работы с

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протоколом WebSocket мы использовали библиотеку okhttp3, с помощью которой можно удобно установить двунаправленное соединение с сервером Zendesk Chat. В данном случае такое соединение используется для того, чтобы сервер мог сразу же уведомлять нас о новом сообщении пользователя или других событиях.

Аналогично реализациям других каналов, для Webim для удобного взаимодействия с данными мы создали классы модели. Альтернативой использования протокола WebSocket для получения входящих сообщений от сервера является указание на нем webhook URL. При возникновении какого-либо события, например, при новом сообщении пользователя, сервер будет отправлять запрос на этот URL со всей необходимой информацией. Также одной из задач, связанной с интеграцией сервиса Webim, был сбор логов диалога пользователя с оператором. Суть в том, что изначально пользователь переписывается с ботом, и все сообщения записываются в базу данных платформы. В случае, если бот не может ответить на сообщение пользователя, к диалогу подключается реальный оператор, и Webim перестает отправлять уведомление о новом сообщении на webhook URL для этого диалога. Для того, чтобы можно было просматривать весь диалог с конкретным пользователем, мы реализовали отдельный сервис, который периодически обращается к Webim и сохраняет все недостающие записи логов.

Аналогично Zendesk Chat и Webim для интеграции с сервисом Bitrix24 [2] был создан

класс Bitrix со всеми классами моделями для данных и с различными константами. Аналогично Webim, о всех событиях сервер Bitrix24 объявляет с помощью запросов, отправленных на заданный webhook url. При входящем сообщении вызывается метод processHuman, который преобразует запрос в унифицированный для всех каналов вид и отправляет этот запрос в другой компонент для получения ответа бота на этот запрос. При получении ответа вызывается метод processBot, в котором этот ответ уже преобразуется в вид, специфичный для Bitrix24, и, используя объект класса BitrixApi, вызывается нужный метод.

Анализ результатов и тестирование

Для того, чтобы пользователь мог удобно подключать реализованные мной каналы общения, мы добавили в интерфейс платформы Just AI Conversation Platform новые элементы.

Первым делом в окно создания каналов были добавлены три новые кнопки с названиями сервисов и их логотипами (рис. 2).

Вторым шагом было создание для каждого канала общения индивидуальной формы. Эти формы позволяют указать необходимые данные, чтобы было возможно подключить канал. Кроме специфичных для канала полей также было необходимо добавить в формы общие для всех каналов данные, такие как название канала, ветка в репозитории со сценарием, а также режим деплоя - автоматический или нет.

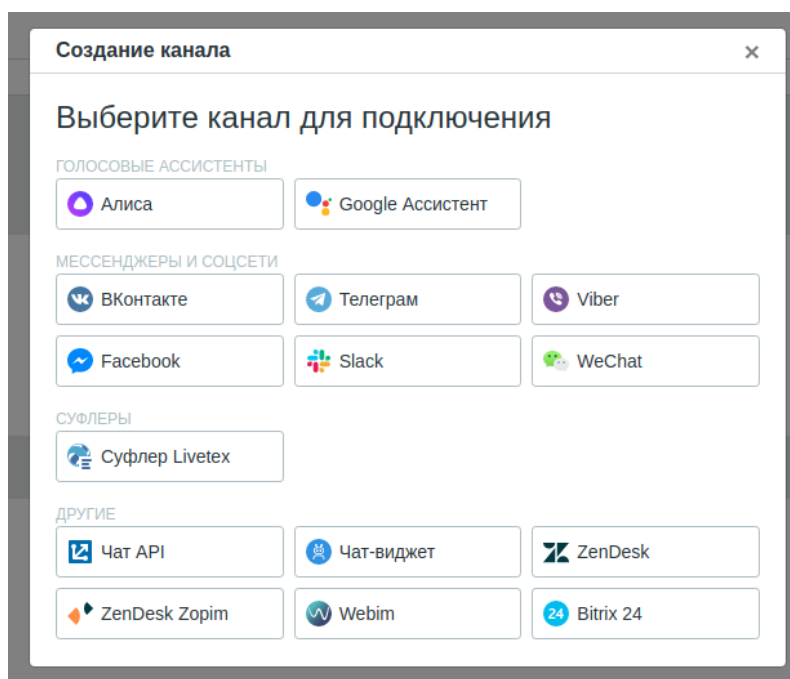


Рис. 2. Окно добавления канала

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Для канала Zendesk Chat от пользователя необходимо только одно поле - токен доступа. Форму создания этого канала можно увидеть на рис. 3.

Для сервиса Webim, кроме токена доступа к API, необходимо также указать домен аккаунта.

Для того, чтобы осуществить сбор логов между пользователем и оператором, необходимо указать электронную почту и пароль администратора. Эти два параметра не являются обязательными. Форму создания канала Webim можно увидеть на рис. 4.

Рис. 3. Окно добавления канала Zendesk Chat

Рис. 4. Окно добавления канала Webim

Bitrix24 имеет очень гибкую настройку для создания ботов. Для них можно указать имя, фамилию, отчество, год рождения, аватар и многое другое. Для более дружелюбного интерфейса было решено оставить настройку только основных параметров бота, таких как имя, фамилия, электронную почту и аватар бота. Для того, чтобы обращаться к API сервиса,

пользователю также необходимо указать код и ключ приложения. Внешний вид получившейся формы можно увидеть на рис. 5.

Для того, чтобы можно было проверить реализованные интеграции, мы решили написать в платформе JAICP тестового бота, который будет представлять собой игру в города. К этому боту

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мы подключим реализованные нами каналы и проверим корректность их работы.

Платформа Just AI Conversation Platform имеет свой язык для написания сценариев работы бота. Он имеет огромный функционал, и с помощью него можно реализовать сценарий

любой сложности. В сценарии объявляются состояния, в которых может находиться бот в каждый момент времени, и в зависимости от состояния выполняется конкретная логика.

Создание канала

24 Bitrix 24

Название: Bitrix 24

Токен: Введите токен

Имя: Имя

Фамилия: Фамилия

Email: Email

Открытые линии: Открытые линии

Код приложения: Код приложения

Ключ приложения: Ключ приложения

Аватар бота: Аватар бота

Аватар бота: [Upload icon]

Ветка: master

Публикация: Автоматически Вручную

Назад Отмена Создать

Рис. 5. Окно добавления канала Bitrix24

В сервисе Zendesk Chat (Zopim) была создана учетная запись, получен токен доступа для возможности подключения бота и скопирован скрипт виджета сервиса, который можно вставить на свою страницу. Результат диалога пользователя и бота можно увидеть на рис. 6.

В этом канале общения есть возможность переводить диалог на реального оператора.

Процесс подключения бота для Bitrix24 немного отличается. В отличие от Zendesk Chat первым делом канал создается в платформе JAICP. После создания в платформе генерируется webhook адрес, который уже необходимо вставить в Bitrix24. После установления этого адреса бот становится доступным. На рис. 7 представлен процесс общения пользователя с ботом, используя канал Bitrix24.

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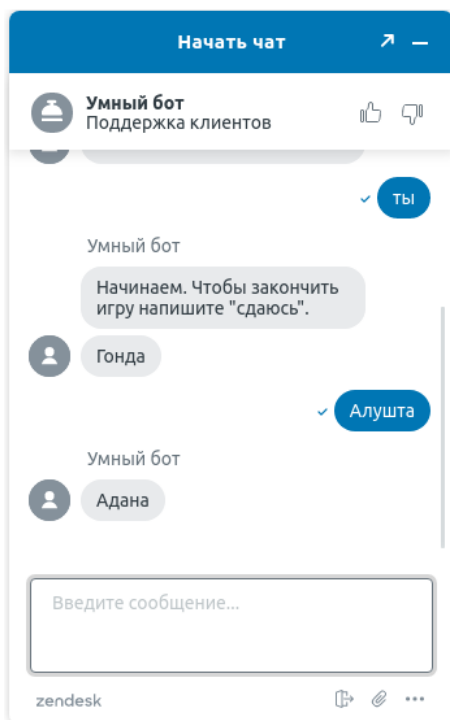


Рис. 6. Виджет сервиса Zendesk Chat

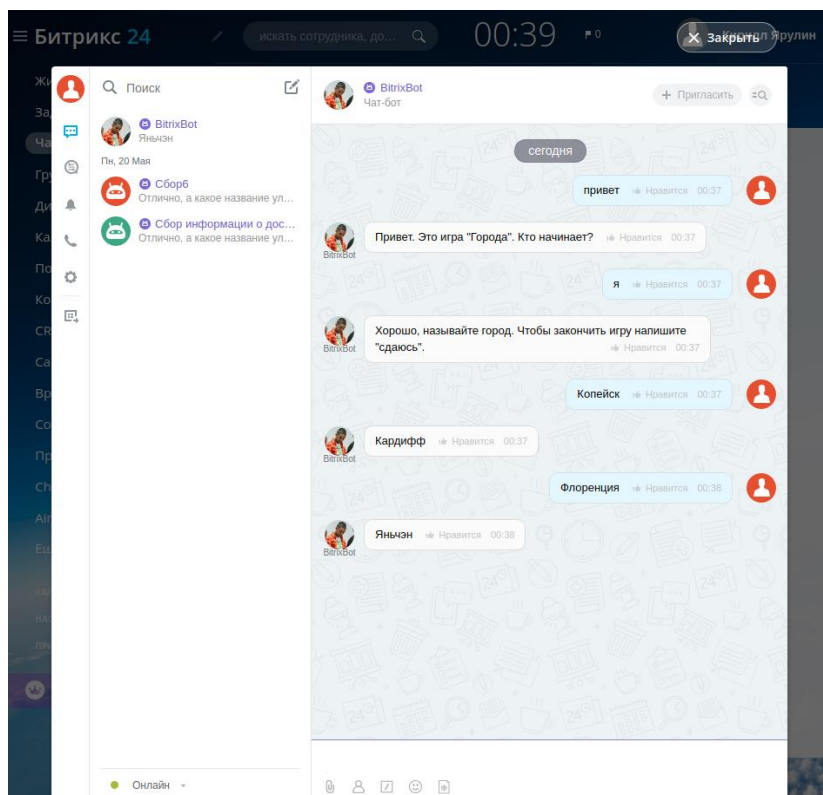


Рис. 7. Чат в сервисе Bitrix24

По сравнению с Zendesk Chat и Bitrix24, проверку интеграции с сервисом Webim пришлось проводить другим способом. Сложность оказалась в том, что в Webim невозможно создать бесплатный тестовый аккаунт. Исходя из этого,

для проверки нашей реализации, мы написали тесты, которые проверяют, что на каждый возможный запрос от Webim в ответ отправляется корректный JSON.

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Так как для получения ответа бота активно используется другой компонент, для тестирования функционала сервисов пришлось написать mock класс, который будет имитировать работу реального компонента.

Чтобы в тестах можно было проверить, какие именно данные попадают во внешний компонент, мы создали класс `TestEventConsumer` с пустым методом `process`, который вызывается в классе `EchoBotServerConnector`. Далее в наших тестах с помощью библиотеки `Mockito` мы проверяем, с какими именно данными вызывался метод `process`.

В каждом тесте с помощью объекта `mockMvc` выполняется запрос на `webhook` адрес канала и проверяется статус и тело ответа.

Заключение

В результате работы была успешно осуществлена интеграция сервисов онлайн

консультирования `Zendesk Chat` (`Zopim`), `Webim` и `Bitrix24` с платформой создания чат-ботов `Just AI Conversation Platform` (`JAICP`). Также, кроме реализации серверной части, были добавлены формы создания новых каналов общения в интерфейсе платформы `JAICP`.

Чтобы проверить корректность работы интеграции сервиса `Webim`, были написаны тесты, которые проверяют, что на каждый возможный запрос от `Webim` возвращается верный ответ. Так как для сервисов `Zendesk Chat` (`Zopim`) и `Bitrix24`, в силу сложности их API, написание тестов оказалось затруднительно, для тестирования работы этих каналов было принято другое решение. В платформе `JAICP` был написан тестовый сценарий бота, который представляет собой игру в "Города". Далее к нему были подключены каналы `Zendesk Chat` и `Bitrix24`, и осуществлено ручное тестирование.

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ATTITUDE TO THE ECOLOGY OF PLANTS IN THE UZBEK NATIONAL CUSTOM

Abstract: This article describes the cultural and philosophical aspects of environmental problems, including the restoration and development of the tradition of ecological culture of the Uzbek people, which is one of the most pressing problems of our time. The article highlights the scientific and cultural foundations of ecological culture, based on the knowledge of plants and ancient traditions and customs.

Key words: Ecology, nature, plants, traditions, nationality, culture.

Language: Russian

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Classifiers: Philosophy.

ОТНОШЕНИЕ К ЭКОЛОГИИ РАСТЕНИЙ В УЗБЕКСКОМ НАРОДНОМ ОБЫЧАЕ

Аннотация: В данной статье изложены культурно-философские аспекты экологических проблем, в том числе восстановление и развитие традиции экологической культуры узбекского народа, что является одной из наиболее актуальных проблем современности. В статье освещены научно-культурные основы экологической культуры, основанные на знании о растениях и древних традиций, обычаях.

Ключевые слова: Экология, природа, растения, традиции, национальность, культура.

Введение

В древности люди относились к природе с точки зрения собственных потребностей. Различные производства и элементы природы, обеспечивающие питание, силу и здоровье людей, считались для них священными. Древние люди, проживающие на территории Узбекистана, относились к растениям с большим почтением. По их мнению, такие растения как чинара, ива, ель, тутовник, орешник, шиповник, гармала, которые растут на этой территории, обладают магической силой. В некоторых населённых территориях сезонное использование природных элементов дошло до степени обряда. В частности, отношения к таким природным обрядам как лечения с

использованием песка, глины, соли, с помощью «яда тоши» звать дождя, поджигать гармалу указывает на божественные отношения к природе.

Древние люди грелись, поджигая растущих деревьев, или же использовали их в других целях. Искажать природу уже много веков интерпретируется как обычное явление. На самом деле «чувствовать природу или же как говориться другими словами, человеческие отношения к ней, развивались постепенно. В первобытном человеке радость часто менялось страхом, ибо природа часто заставляла его чувствовать опасность. Он радовался, когда находил еду, а когда встречался с хищными животными или же, когда погода портилась, его наводил ужас»¹. Позже, когда

¹Толстых В.И. и др. Эстетическое воспитание. – Т.: Укитувчи, 1984. – С. 57.

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природа начала внезапно меняться из-за того, что леса отрубили, озера высохли, люди начали понимать, что надо бережно относиться к окружающему миру.

К вновь восстанавливающим ресурсам относятся не заканчивающиеся в результате использования человеческого потребления почва, продукты, дающие растительный и животный мир, климат и водные ресурсы. Если человек пользуется растениями и животными разумно, то он может получить от них больше пользы. Как пишет академик Д.Лихачёв, «... картина природы – это тоже, как и другие символы, является важной стороной национальной культуры. Не бережное отношение к природе своей Родины – это значит не беречь свою национальную культуру, не защищать её»². В обратном случае почва может подвергнуться эрозии, а виды растительного и животного мира могут исчезнуть.

Ко вновь не восстанавливающим ресурсам также относятся и под земные богатства. Без подземных богатств человеческая жизнь могла бы быть очень жалкой, первобытной и одинокой. Поэтому эту проблему можно решить только при помощи бережного отношения к таким богатствам.

Люди всегда жили в сотрудничестве с окружающей географической средой. Они стремились обосновать, связать свою судьбу, будущее, мечты с признаками живой природы. В легендах такие мечты, радости и горя народа нашли своего отражения. Народ, который был в тесной связи с геосредой, биосферой мог определить свой завтрашний день, хорошее и плохое, тепло-холод, зажиточность и бедствия своей жизни. Для этого, прежде всего, народ долгое время прислушивался к природе, с умом и внимательно следил за изменениями, происходящей в ней. Поэтому, в жизни наших предков была заложена народная синоптика. Народная синоптика совершенствовалась на основе тысячелетних опытов потомков. В народной синоптике, например, дехканин, основываясь своему многолетнему опыту, мог предугадать изменения в погоде. А также имея такие навыки, они могли заранее предвидеть природные явления. Учёный Т.Жавлиев про народную синоптику собрал достаточно интересные факты: «Узбекский дехканин, основываясь своему многолетнему опыту, мог предугадать изменения в погоде, предвидеть некоторые природные явления. Так, если журавли рано начнут улетать на юг, то холода рано начнутся; если домашние птицы перестанут петь и

согнутся в угол, то холода будут долгими; если ворона с утра начнет каркать, то погода испортится; если осенью муравьи будут ходить хороводом, то зима будет тёплой; если рыбы будут прыгать над водой, то можно наблюдать изменений в погоде и пойдет дождь; собака будет лежать, согнув голову в передние лапы – холод наступит, галки летают стаей – дождь пойдет, пчёлки перестанут летать, муравьи начнут крутиться возле своего дома – погода испортится, черный кузнечик начнет петь – погода будет открытой, воробьи зимой стаей начнут чирикать – погода испортится, если листья тополя осенью начнут желтеть сверху дерева, то весна наступит рано, листья дерева полностью не опадут – зима будет долгим, одуванчик закроет «глаза» - дождь пойдет, деревья позже будут раскрывать почки – лето будет долгим, садовая гвоздика начнет благоухать – ветер начнется, вьюнок раскрывается до наступления вечера – ночью будет холодно, если лес начнет гудет, скоро наступит теплые дни»³.

Так как люди находят свою пищу в природе, они издавна поняли, что этот процесс происходит благодаря растениям. Питавшиеся с дикой природы для своего выживания первобытные люди в последствие смогли различать нужные им растения, и дошли до их цивилизации. Пшеница, рис и другие бобовые растения, которые важны для жизни человека, стали основным источником пищи. Человек, который является дитём природы стал разговаривать с природой. Если обратимся к истории растительного мира всей земли, то можем увидеть, что с давних времен до сегодняшнего дня человеческого общества многие народы особо относятся ко многим видам растений, оберегают их, и даже молятся на них. Многие растения, которые достигли уровня потребностей, действительно являются «святыми».

Многие народы древнего мира верили в силу пищевых растений, которые росли естественным путем или же выращивались путем посева, они считали, что в них есть духи богов, и плодородность или мало плодородность этих посевов зависит от этих духов. Например, народы Центральной и Южной Америки создали картошку намного раньше. Для них картошка считалась самым хорошим источником пищи. Долгое время эти народы считали, что в картошке есть дух предков, и если этот дух будет довольным, можно получить много урожая картошки. Чтобы удовлетворить этого духа в давние времена каждый год давали в жертвоприношения детей. Как пишет О.Кодирхужаев,

²Лихачёв Д.С. Письма про доброту и красоту. – Т.: Чулпан, 2007. – С.101.

³Жавлиев Т. Обычай – урок жизни. – Т.: Наука, 1992. – С.22.

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У.Юсупова: «100 гр картошки дает 301,5 кДж или 72 ккал энергии. Поэтому в народе почитая её называли «вторым хлебом»⁴. Американские многие жители считали богом культурных растений – кукурузу. А в тропических странах многие народы считали священными хлебных деревьев. И естественно, поклонялись им.

Как утверждают учёные, древние люди воспринимали природу как живое и считали её наравне с ними одинаковым существом. Они представляли свою жизнь, воодушевляя бездушные вещи, превращая природные силы в неестественные силы. Бывало так, что, если дерево не даёт урожай, то хозяин подходит к нему с топором в руках и припугивает его. Люди вокруг успокаивает его словами «оставьте, не рубите, в следующем году много урожая будет давать». Такое обычай называется «вспугивание глазами». Такого рода обычаем наблюдаются во многих народах страны.

С древних времен некоторые народности мира очень бережно относились к некоторым видам цветов, даже проводили праздники цветов. Позже цветам дали священный и религиозный образ. В том числе, появились разные религиозные легенды о цветах, цветы воспринимались как культ. «На Востоке цветы считались символом любви; в поэзии широко распространилась тема любви розы и соловья. Здесь в суфизме соловей означает жизнь, а красная роза гармоничную красоту создателя»⁵. В частности, у древних индийцев роза трактовалась как принцесса цветов. Роза очень чтилась. В легендах о розах говорится, что самая красивая богиня в мире Лакшми была создана из бутона розы, а бутон розы создан из священных чуд. Поклонение цветам встречается и в Риме. Здесь императоры возвышали себя, укрываясь цветами, они считали особым удовлетворением купание в воде с цветами. В Италии цветам уделяли такое почтение, что сажая цветов на большие площади, страна оставалась без пшеницы. В Японии особо увлекаются хризантемой. Хризантема изображено в Японской государственной эмблеме, в военном государственном флаге. Даже на государственной валюте изображен этот цветок.

Древние народы, предки, прожившие в Средней Азии, как и другие народности положительно относились к цветам. Они издавна любили выращивать цветов. Издавна известно, что цветы дарили друг другу в хороших днях, на

свадьбах, на праздниках с хорошими пожеланиями. Ученый этнограф Н.Остроумов писал так: «Я удивился тем, что, казавшись несообразительным поденщик, бедный возчик или водоносчик, даже нищий, нацепил на ухо цветы, или же ищет цветы, чтобы нацепить его под тубетейку»⁶. Отношение к цветам наших предков видно с этих слов.

Узбекский народ в течение тысячелетие чтит и выхаживает красивые и полезные виды растений в природе. Прежде всего наши предки бережно относились ко всем видам растений, которые существует в природе, эффективно пользовались ими. В том числе, использовали в качестве пищи такие полевые и горные редкие и лекарственные растения как шпинат, щавель, чернушка и тому подобные. Считается обычаем сажать. В каждом узбекском дворе на ряду с цветами благоухающие растение как базилик. Издавна дехкане возле грядках сажали ароматный выюн. Это являлся обычаем дехканов. Такие обычаи в настоящее время стало исчезать.

Среди национальных обычаев выхаживание фруктовых и декоративных растений имеет особое место. Не зря в народе имеется такие мудрые выражения как «сажай дерево, создай сад», «если хочешь сам вырастить, выращивай деревья», «тот, кто сажает один куст тутовника, 1000 лет будет собирать жемчуг», «одного дерева вырубил, на место его посади 10 деревьев», «хоть ты царь, хоть ты нищий создай сад», «от хорошего человека остается его сад», «судьба сада в руках его садовника»⁷.

После прихода в Среднюю Азию арабов исламские догматы о растениях изменили отношения людей к природе, растениям. Многие растения исламизировались, даже некоторых из них называли именами пророков. Про некоторые растения сочиняли легенды и предания, в народе название этих растений считались священными. Распространение «секретов», связанные с растениями привели к возникновению специальных трактатов. Например, Абу Тахирхужа в своей книге «Самария» написал о растении иксир, которое встречается вокруг Самарканда следующее: «Если кто-либо это лекарственное растение будет держать в себе, то он будет удостоен общению с душами умерших»⁸. В другом источнике сказано, что растения, созданные богом разделены на людей и бесов. Например, в 13 главе книги «Необыкновенные

⁴Кадирхужаев О., Юсупова У. История возникновения картошки и его значение с народном хозяйстве // Вестник экологии, 2018. № 2 (202). – С.42.

⁵Мингбоева Д. Волшебство символов. – Т.: Поколение нового века, 2007. – С.70.

⁶Остроумов Н.П. «Сарты». – Т. 1908.

⁷Смотри: узбекские народные пословицы (Составители: Т.Мирзаев, А.Мусакулов, Б.Саримсоков; Ответственный редактор: Ш.Турдимов.) – Т.: «Шарк», 2003.

⁸Абу Тохирхожа. Самария. – Т.: Камалак, 1991. – С.20

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существа и удивительные создания», посвященная животным, растениям и камням, которая была опубликована в Казане в 1909 году сказано, что все растения на земле созданы богом и только 760 видов растения служат людям, а остальные созданы для развлечения бесов.

По мнениям ученых растениеведов в городах и селах Средней Азии существует много растений, которые считаются священными, и их можно разделить на две группы. В первую группу относятся тутовник, орешник, ива, карагач, чинара, жийда, фисташник, канранги, боярышник, шиповник, инжир, тамариск, бусинки четок, а во вторую группу цветки пиёна, хиял, гармала, василёк, аронник, волосы зухры, чеснок.

Некоторые растения как чинара, ель, гармала, орешник и жийда до распространения с Среднюю Азию Ислама считались священными. Можно сказать так о луке, чесноке и острого перца. По утверждениям некоторых источников в средние века было популярным поклоняться чесноку. Его луковицу носили как талисман. Он охранял младенцев от злых духов.

В народе ель считают красой лесов и гор. По преданиям создатель источника жизни – воды Хаким Лукман, не смея выпить эту воду, вылил её под молодым елям. Поэтому ель живёт долго и стоит вечнозелёным. По исследованиям академика А.Аскарлова, в бронзовом веке в украшениях женщин, в бытовых предметах был изображен ель. Во многих случаях ель символизирует вечную жизнь, вечную молодость. По мнениям горных жителей, каждый ель в лесу равен колодцу, он зимой хранит снег, а летом хранит влажность⁹.

Известно, что чинара является многолетним деревом. Она живет тысячелетиями. Люди считают чинар священными, которые видели десятки веков, и называют их «Чинар бобо». В основном, под чинарой обустроивали многолюдные станции. Например, в районе Бойсун в местности Сайроб когда-то была большая чинара, которую называли «чинорикалон», под этой чинарой была советская контора. Здесь также была школа, занимающийся с безграмотностями. Фергану называли городом чинар. В 80-годы как уникальный опыт здесь проводились праздник Чинар.

В народе есть мудрое выражение «Орешник – дерево мудрости». В народной медицине существует разные лекарства, приготовленные из плодов и листьев орешника. В горных районах орешник служит средством предотвращения эрозии почвы. Этот целебный, сытный природный барьер хорошо удерживает почву, улучшает

микроклимат. Среди Нуратинских цепях есть ореховые рощи. Осенью, когда местный народ начинает собирать урожай орешника, это время непосредственно превращается в праздник.

Существует множества обычаев, касающиеся деревьев и плодов тутовника. Из деревьев тутовника мастерят различные изделия, такие как ложки, чашки, музыкальные инструменты и т.п. Плоды тутовника считаются лекарственным и из него готовят хлеб, сок, варенье, употребляют в измельченном, в сушеном виде. Тутовник лечит многие заболевания.

В древности во время засухи, когда было мало собрано пшеницы, весной начиналось голодное время. Голодание обессиливал народ. Многие погибали от голода. И тогда кто доживал до созревания раннего, сытного и целебного тутовника, тот обязательно оставался живым и здоровым. Тем самым дерево тутовника издавна превратился в культ. В некоторых местностях, в том числе, в подножие гор района Фориш, когда тутовник созревал, начинался праздник тутовника.

В Узбекистане праздники, посвященные цветам, до сих пор хорошо отмечается. И это неспроста. Для усовершенствования новых праздников служили основой такие народные исторические праздники, которые проводились на природе как «Праздник цветов», «Подснежник», Праздник тюльпанов», «Гулсурх». Эти праздники являлись традиционными.

«Праздник цветов» - посвящается одним из красивых чудес природы – цветам. Цветок – весьма нежное и красивое растение, символ красоты, источник жизненной красоты и веселья. Невозможно представить свою обыденную жизнь без цветов. Цветы, в первую очередь, определяет отношение человека к жизни. Например, от человека, который держит в руках цветы, в данном случае невозможно ожидать плохое. В самые радостные и волнительные дне человеку дарят цветы. Влюбленный свои нежные и великие чувства выражают при помощи цветов. «Цветы – символ доброты, щедрости, красоты. Цветы дарят друг - другу, выражая уважение, любовь, свою искренность. Оно имеет важное значение в воспитание в человеке любви, доброты, сострадания»¹⁰. Не одно мероприятие не проходит без цветов. Поэтому любители цветов в своих садах проводят праздники, посвященные цветам.

Всем известно, что в нашей Республике самый большой праздник, посвященный цветам, проводится в городе Наманган. Жители Намангана считаются людьми тонкой натуры. Они по-особому любят и оберегают цветов.

⁹Жавлиев Т. Обычаи – урок жизни. – Т.: Наука, 1992.

¹⁰Нишонова О. Эстетическая сущность узбекской этно культуры. – Т.: Наука, 2013. – С. 145.

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Именно это является причиной проведения этого знаменитого праздника цветов в Намангане¹¹.

В городе Намангане проводились достаточные опыты для проведения этого праздника. Здесь хорошо предусмотрены организационные работы. Для праздника выращиваются специальные цветы. Подготовка начнется за месяц. Специальная организованная группа начинает свою деятельность, для этого выделяются средства. Надо заметить, что разработан специальный Устав по проведению этого праздника. Праздник цветов традиционно начинается с раннего утра с музыкой. Не оставляет без внимания художественные портреты, лозунги, сделанные из живых цветов. С двух сторон центральной дороги организовываются выставки цветов. В нем участвуют со своими любимыми и выращенными цветами организации, общества, учебные заведения, школы, оздоровительные учреждения и любители цветов. Является очень интересным рассматривать фотоальбомы, семена самых хороших и необычных цветов, портреты, панно, эмблемы, сделанные из живых цветов, самые необыкновенные и необычные виды цветов участников выставки. Особенно, привлекает внимание викторина цветов. Там проводятся вопросно-ответные беседы о сортах цветов, об их секретах и методах выращивания.

На празднике цветов в разгар выходит и массовые представления. В садах начинаются концерты, посвященные цветам – принцессе красоты. На эту тему придаёт красоту выступления фольклорных ансамблей, остроумные шутки, представления художественных программ. В конце праздника цветоводы награждаются. Те, кто достиг успехов в своей работе, награждаются премиями, ценными подарками, дипломами. Современные праздники цветов в жизни нашей республики как народное обычае нашли своё место и играют важную роль в экологическом и эстетическом воспитании людей. «Поэтому наш народ в этнической культуре проводят такие праздники цветов как «Праздник подснежника», «Праздник фиалки», «Праздник красного цветка», «Праздник тюльпана». Главный субъект этих праздников – женщины и девушки¹².

Заключение

Человек со времен своего появления оказывал влияние на природу. Во времена развития человеческого общества в период первобытного общества главным источником

жизни людей было занятие охотой. Главным образом, рыболовства являлся некоторым источником проживания. Однако, в данной ситуации человек был полностью зависим от природных условий. Когда, в местах обитания людей стали сокращаться животные для охоты, люди были вынуждены находить другие источники проживания. И в данном случае люди были вынуждены обращаться к растениям. С одомашниванием нужных животных, начала развиваться земледелие. Озеленили пустыни, срубили и подожгли леса, и большие площади превратились в поле. Жизнь человека стала еще ближе к растениям. В настоящее время 11 % суши заняты посевной площадью, 17,5% - лугами и выгонами. Растения, выращиваемые в этих полях, является главным источником проживания людей. Растительный мир является источников 20 000 видов химических и лекарственных веществ. Все они выполняют роль «фильтра», который очищает воздух. Известно, что один куст дерева в течение 25 часов вырабатывает кислорода, который хватает на три человека. А деревья, посаженные на 1 га площади, «глодают» 220-280кг газа карбоната ангидрида и вырабатывает 180-200кг кислорода¹³.

В Коране Аллах неоднократно утверждал, что для продолжения человеческой жизни очень важен растительный мир: «Разве они не видят, как мы небо над их головой поставили как здание без всяких отверстий?! 7. А землю сотворили широким и расположили в ней горы и в нем вырастили красивыми парами разные растения, фрукты. 8. Это мы сделали для того, чтобы это было наглядностью и примечанием каждому божьему человеку, который возвращается к всевышнему. 9-10. Мы с небо дали благодатную воду – дождя, с его помощи растут сады, посеви, вырастили большие деревья. 11. Это все для того, чтобы было пропитание людям»¹⁴. В священной книге Коран в нескольких сурах неоднократно упоминаются сады, в основном, хурма, оливковое дерево, виноградники. Это говорит о том, что эти растения являются очень важным в жизни людей, и даже на уровне святости.

Для выращивания растений, посевных полей и для охранения их от разных бед в народе существует ряд обрядов. Эти обряды исполняются и в настоящие дни. Например, летом, когда урожай полностью поспеет, постоянные ветры вредит урожаю. И в таких случаях, когда предки считали себя бессильными перед силой природы, они обращались к обряду «Чоймомо». По данным ученого-фольклориста Б.Саримсокова этот обряд,

¹¹Карабаев У. Праздники узбекского народа. – Т.: Шарк, 2002. – С.85-90.

¹²Карабаев У. Праздники узбекского народа. – Т.: Шарк, 2002. – С.85.

¹³eko.uz/30.09.2016 08:09

¹⁴Коран. Сура Коф. – Т.: Чулпон,1992. – С.367.

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в основном, проводился пожилыми женщинами, бабушками. Две бабули, одинаково одевшись, в одной руке держали палку, а другую палку насаживались как на «деревянного коня» и, бегая по улицам села, пели песню «Чоймомо». За ними ходили 5 девиц, укрывшиеся на красный половик. А за ними ходил на ослике мальчик 7-8 возраста и собирал подаяния. Участники обряда, обходя все село, складывали все подаяния и проводили благотворение в честь бабушки Ветра.

В жизни земледельцев зимой и осенью бывают множество обрядов. Многие из них связано со сбором урожая. Часть этого обряда выполняют во время сбора урожая, а часть после сбора или же по окончанию трудовой деятельности. Б.Саримсоков по окончанию сбора пшеницы говорил так: «конец сбора урожая называется «матерью пшеницей», его косили и в виде пучка, завязывали и приносили домой, и заносили в комнату, вывешивая в угол дома. Этот пучок сохраняли до следующего посева. Весной их зерна готовили хлеб и давали земледельцам,

которые вышли в поле для посева нового урожая. Зерна этих пшениц использовали в качестве зерен для домашних птиц. Земледельцы, употребляя этот хлеб, говорили, чтоб в этом году урожай также был плодородным, и оставшиеся зерна сеяли в качестве первого посева¹⁵.

Осенних обрядов было очень много. Среди них бывают «Праздник винограда», «Праздник дыни», «Праздник инжира». Эти обряды не во всех районах проводятся одновременно. Какой фрукт, где больше поспекает, там и проводится этот праздник. Например, праздник инжира проводится вокруг Кокана, праздник винограда – в садах Самарканда, праздник дыни славился в Хорезме. Эти праздники длились неделями.

Традиции, связанные с растительным миром, в основном, считается как мероприятие, приводящиеся во благо народа. Такие обычаи очень ценится народом. Прогресс такие традиции и обычаи ценит по-иному. Такие обычаи в настоящее время сочетаются в гармонии с природой и человеком.

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CULTURE AND ART: SOCIAL PHENOMENA OF INTEGRATING UZBEK STUDENTS WITH SCIENCE, BUSINESS AND GLOBAL COMMUNITY FROM THE SCHOOL AGES CASE OF GIJDUVAN SECONDARY SCHOOL

Abstract: In modern social development of the integrated chain relations in the hot points of world Uzbekistan plays predominant role in world civilization. It is clear that not only religious point of view but also socio-cultural and art style phenomena in the past history. Revitalization of secondary education at schools pushes forward ancient ancestors of Uzbek style classic etalon of world heritages upcoming in innovative way. Physical and spiritual wellbeing of the younger generation, the intellectual potential of our nation is growing for a new perspective development of the country. In this paper work it has been studied historical issues of Uzbek art and culture with modern relationship of the innovative school teaching methods. Five priority of the President of Uzbekistan combined and compared with both classical era and new development school transformation phase.

Key words: Central Asia, Uzbek, culture and art, secondary school, five key initiatives, new approaches.

Language: English

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Classifiers: Pedagogy. Psychology. Innovations in the field of education.

1. METHODS AND MATERIALS

It has been used qualitative methods with ethnography, phenomenology, some case studies and secondary source data for comparing core of the

research topic. As a materials Encyclopedia Britannica, National Encyclopedia and official internet sources.

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2. INTRODUCTION

Recent changes in total economy of the Uzbekistan involved even secondary education system development from the early beginning. A number of important documents have been adopted in the five priority areas of the Republic of Uzbekistan to improve the youth policy defined in the Action Strategy, to protect the rights and interests of young people, and to create the necessary conditions for their harmonious development, practical work has been accomplished, and certain results have been achieved. However, new reforms to be done on this issue is always extensive and keeps its relevance.

From this point of view, on March 19, 2019, under the leadership of the President of the Republic of Uzbekistan "On the implementation of five important initiatives to increase interest in culture, arts, sports, information technology, "At the videoconference that was held, issues of youth development were discussed and five key initiatives were proposed. As President of the Republic of Uzbekistan Shavkat Mirziyoyev noted: "Today spirituality and enlightenment, moral value, education of young generation, emerging new achievements and approaches that change the world rapidly is more important than ever before to focus on achieving perfection". On this issue we would like to study the first initiative which is to increase the interest of young people in music, painting, literature, theater, and other types of art.

These initiatives involve the comprehensive upbringing of the young generation, the meaningful and productive work of their leisure activities and the involvement of relevant sectors. At the meeting, the objectives of each initiative were clearly defined and the executive branch was entrusted with the tasks. In particular, the Republican Fund for Spirituality and Enlightenment has become an active participant of the fourth initiative - as a responsible organization for raising the spirituality of the population, especially among young people, as well as promoting readership. [1]

Particularly, the draft program of the first initiative on the involvement of young people in the culture and arts was prepared. According to him, in 2019-2020 it is planned to approve the regional "road maps" for the culture and arts of 2 million young people between the ages of 14 and 30. There are also additional classes in children's music and arts schools, as well as musical instruments, singing art circles, amateur theater groups and children's ensembles at the Cultural Center. The address list of cultural centers, which is being reconstructed and repaired and equipped, is also formed.

The head of state noted that the lack of mechanisms for implementation of the draft program and the practical tasks of the well-known figures assigned to each city and district as creative consultants were not clearly defined. He stressed the

need for systematic organizing the implementation of regional road maps, encouraging children and adolescents to attend clubs and classes, including various contests.

It was instructed to allocate appropriate funds for the construction, reconstruction and capital repairs, as well as providing cultural centers, music and arts schools with musical instruments. [2]

The program of measures to raise the level of youth spirituality, including the promotion of readership, is aimed at implementing the fourth initiative goals. According to him, one million copies of books, artistic, historical, scientific and popular subjects are planned for each region. It is also planned to reconstruct and repair information and library centers, and open public libraries by entrepreneurs. [3]

3. DISCUSSION

Ancient Heritage Uzbekistan Culture: Recognition by West

Situated at the heart of Central Asia, Uzbekistan is a land of ancient and rich artistic culture. Its original folk decorative and applied arts are closely connected with the Uzbek people's traditional way of life and customs. At the same time reflecting its artistic taste and aesthetic world perception formed over centuries, they are an integral part of its cultural identity and a special source of pride. [4]

Uzbekistan was the site of one of the world's oldest civilized regions. The ancient Persian province of Sogdiana, it was conquered in the 4th cent. BC by Alexander the Great. Turkic nomads entered the area in the 6th cent. AD It passed in the 8th cent. to the Arabs, who introduced Islam, and in the 12th cent. to the Seljuk Turks of Khwarazm. Genghis Khan captured the region in the 13th cent., and in the 14th cent. Timur made his native Samarkand the center of his huge empire. The realm was much reduced under his successors, the Timurids, and began to disintegrate by the end of the 15th cent. [5]

The culture of Uzbekistan is bright and unique - it has been formed over thousands of years, including the modernization of the traditions and customs of the people. The ancient Persians, Greeks, Arabs, Chinese, Russian and nomadic Turkic tribes contributed to the Turkish culture, which is considered the embodiment of Central Asian cultures, a crossroads. Traditions that reflect the multinational nature of Uzbekistan are omnipresent in its music, dance, painting, arts and crafts, language, cuisine and clothing. Each region of Uzbekistan has its own unique shades, which are most clearly manifested in national attire and local dialects.

Art

Art in Uzbekistan reflects the peculiar history of this country on the canvases of its masters. For example, the wall painting in Afrosiab is one of the best examples of pre-Mongolian art in the region. However, with the advent of Islam, the image of a

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person was prohibited, and the use of abstract painting increased. The art of miniatures appeared later and eventually reached perfection, becoming today one of the most recognizable trends in the visual arts of Uzbekistan. Kamoliddin Behzod (16th century), Ahmad Donish (19th century) and Abdulkhalik-Mahmum (20th century) - masters of miniatures of Uzbekistan. In the 20th century, there was a sharp shift in Russian asceticism, among which Igor Savitsky was especially known for creating a unique museum of painting in Nukus. In the 21st century, the painting of Uzbekistan united world tendencies, while retaining its unique features. [6]

Literature

The history of literature in Uzbekistan comes from oral traditions and folklore legends, epics and fairy tales. Legend of Bogaturgiya (hunter knights) Alpamish and inventor Nasriddin Afandi are an integral part of Uzbek culture. In the Middle Ages, poets and writers appeared in Uzbekistan. Their names are known to every citizen of the country: Ahmad Yunaki, Alisher Navoi, Bobur, Jomi and others. The literary heritage of Uzbekistan at that time is full of poetry and numerous works of love, happiness and wisdom. In the nineteenth and twentieth centuries satirical and dramatic drama in Uzbekistan became popular. The most famous Uzbek writers of the 20th century - Furkat, Gafur Gulam, Muqimiy, Hamid Alimjan, Zulfiya, Abdullah Qahhor and dozens more people. Modern literature in Uzbekistan is very diverse, but unfortunately it is not as popular as the classic canoe. Read more ...

Music

Uzbekistan's folklore and Uzbek poetry are a distinctive feature of the ancient culture of the Uzbek people. The special musical genre "Shashmak" in Uzbekistan and Tajikistan is included in the UNESCO list of works of the oral and intangible cultural heritage of mankind. Classic and contemporary folk music have similarities with universally recognized music, but with a special voice of Uzbek musical instruments keeps their original taste. The most popular musical instruments of Uzbekistan - karnay, surnay, dutar and circle. Today, Uzbek folk music can be heard at weddings, gala concerts, concerts and twice in the famous Sharq Taronalari Festival, held every two years in Samarkand.

Musical tradition throughout southern Central Asia provides a distinctive classical form of composition in the great cycles of maqoms handed down from master performers to apprentices. Television and radio as well as concert halls offer maqom cycles in live performances. [7]

Dance

Uzbek dances are distinguished by the beauty and culture of the Uzbek people. Uzbek folk dances

are different from other regional dances as they pay attention to their hand movements and facial expressions. Each part of Uzbekistan has its own dance schools, some of which are sharp and in others smooth and smart. Likewise, others prefer to use a shorter step, while others try to get on the run. Today there are three Uzbek dance schools: Khorezm, Bukhara and Fergana. It's easy to watch Uzbek dances - you can not celebrate without them, all of us like to dance! The folklore performances at the Nadir Divan-Begin madrassah in Bukhara everyday can be appreciated by the taste of Uzbek dance.

Folk masters

Art and craftsmanship are one of the most popular parts of Uzbek culture, offering different options for selecting souvenirs for tourists. Uzbek artisans will pass from hand to hand the secrets of craftsmanship and their works are of high quality and magnificent. Jewellery, ceramics, sewing, stoning and others are recognized all over the world because of their silk, clay, wood and metal works, smooth lines, geometrically perfect patterns and shapes. The most famous masters of Uzbekistan - ceramists of Gijduvan and Rishton, Bukhara and Chust sweaters, Margilan and Samarkand wine lovers. Craftsmen often hold workshops of their master's workshops and show their collections of works that you can learn from the best works of your ancestors.

Uzbek Culture is one of the brightest and original cultures of the East. It is famous with its incomparable national music, dances and painting, art and literature, unique national kitchen and clothes. [8]

Uzbekistan culture is very colorful and distinctive. It has been formed over millennia and has taken in traditional and customs of various nations settled on the territory of today Uzbekistan. The main contribution to the development was made by ancient Iranians, nomad Turkic tribes, Arabs, Chinese, Russians. Traditions of multinational Uzbekistan reflected in the music, dances, fine art, applied arts, language, cuisine and clothing. Population of the republic, especially rural population revere traditions deeply rooted in the history of the country. The Great Silk Road played a great role in the development of Uzbekistan culture. Being the trade route, it ran from China to two destinations: first one was to Ferghana Valley and Kazakh steppes and second route led to Bactria, and then to Parthia, India and Middle East up to Mediterranean Sea. [9]

Uzbekistan is the geographic and population center of Central Asia. The culture of Uzbekistan has a wide mix of ethnic groups and cultures, with the Uzbeks being the majority group. The country has a diverse economy and a relatively young population. Ethnic groups: Uzbek 83.8%, Tajik 4.8%, Kazakh 2.5%, Russian 2.3%, Karakalpak 2.2%, Tatar 1.5%, other 4.4%. Muslim 88% (mostly Sunni), Eastern Orthodox 9%, other 3%. [10]

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Humanities

During the Soviet period, the government gave extensive support to the arts, building cultural centers in every city and paying the salaries of professional artists. With independence, state funding has shrunk, though it still makes up the bulk of arts funding. Many dance, theater, and music groups continue to rely on the state, which gives emphasis to large productions and extravaganzas, controls major venues, and often has an agenda for the artists to follow. Other artists have joined private companies who perform for audiences of wealthy business-people and tourists. Some money comes in from corporate sponsorship or international charitable organizations—for example UNESCO and UNDP. [11]

Literature

The territory of Uzbekistan has a long tradition of writers, though not all were Uzbek. The fifteenth-century poet Alisher Navoi, 1441–1501, is most revered; among his works is a treatise comparing the Persian and Turkish languages. Abu Rayhan al-Biruni, 973–1048, born in Karakalpakistan, wrote a massive study of India. Ibn Sina, also known as Avicenna, 980–1037, wrote The Cannon of Medicine. Omar Khayyam, 1048–1131, came to Samarkand to pursue mathematics and astronomy. Babur, 1483–1530, born in the Ferghana Valley, was the first Moghul leader of India, and wrote a famous autobiography.

Until the twentieth century, Uzbek literary tradition was largely borne by bakshi, elder minstrels who recited myths and history through epic songs, and otin-oy, female singers who sang of birth, marriage and death. [12]

Uzbekistan: Land of a thousand shrines. Central Asia's most populous country boasts a wealth of well-preserved mosques and shrines in famous silk road cities like Samarkand and Bukhara. For millions of Uzbeks these are sacred places. But for the Uzbek government they also represent an opportunity to boost tourism. [13]

4. RESULTS

Business and Uzbek Branding

Applied Arts

Handicraft developed in [Uzbekistan](#) from century to century, leaving unique products of the unknown foremen with rich arts, imaginations and perfection in Uzbek heritage. Due to the changes of social and economic conditions, handicraft gradually became the second after industrial productions on an extent of 20th century.

Ceramic. Pottery was one of the most developed manufactures of the Central Asia for several years. Spray and dry ceramics of the leading centers had local peculiarities that have been reflected in the original forms of final products. Number of local

pottery centers are preserved to present days, such as Rishton, Gijduvan, [Khiva](#), [Samarkand](#), Gurumsaray, Shakhrisabz, Urgut, Khorezm and [Tashkent](#).

Engraving. Modern foremen, who work with a brass and copper, manufacture high quality products of engraving. A subtlety and wealth of patterns are inherent in the ware by the [Bukhara](#) foremen. Alongside the use of traditional forms of products, now foremen search for new forms and styles in the field.

Wood engraving. Masters of wood engraving in Kokand National Heritage Center use oak and nut trees. Creating traditional products common in the East (caskets, bookshelves, and craved tables), they transfer rich traditions of geometrical ornaments.

Gold embroidery. Traditional center of this kind of crafts is in [Bukhara](#). Today embroidery art is popular among the younger generation, as well. The foremen produce goods in the best traditions of the [Bukhara](#) gold embroidery.

Embroidery. Traditional centers of manufacturing of suzana are: Nurata, [Bukhara](#), [Samarkand](#), Shakhrisabz, [Tashkent](#) and [Fergana](#). Many young artists have become interested in these kind of art. This is, not casual - as if creative energy in the people has woken up, by feeling an opportunity of practical realization and material effect, which in its turn led the flourishing of many kinds of traditional arts.

Dolls. Manufacturing of dolls is one of the particularly lost and revived arts. In recent history, theatrical presentations of dolls were the favorite entertainment of both villages and town drawlers. The doll master of [Bukhara](#) study a history of a [Bukhara](#) costume, use traditional technology of tailoring, embroidery, and the [Bukhara](#) karakul fur.

Carpeting. Now manufacturing of carpets in [Uzbekistan](#) develops in 3 directions: homemade, state and private companies. Carpet masters produce all kinds of carpets in these provinces. Old classical Uzbek and Turkmen carpets are used as main samples in carpet making. Main tasks of carpet-makers include the restoration of ancient drawings, creation of new good quality products, and above all, - restoration of technology of traditional dying of natural fabric. Long use of aniline dyes had its negative effect upon aesthetic qualities of the homemade carpets with further turning them to an ordinary household item.

Silk weaving. The revival of the silk weaving is related to the activity of "Yodgorlic" company in Margilan. Today production of national fabrics such as atlas, khon-atlas, shkhi-bekasam and bakhmal is

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restored. Ancient traditional patterns are revived, and at the same time, special attention is paid towards restoration of natural dyes.

Silk carpets. Production of silk carpets is revived in [Samarkand](#), where silk carpet factory has been established. The factory only uses local natural dyes, which give the final product a sense of originality. The carpets are woven a vertical and horizontal loom. Density ranges from 600-800 thousand knots to 1 million 200 thousand knots per square meter. The length of nap does not exceed 2 mm.

Varnished painting. In revival of the varnished painting, a tradition, which was completely lost, the technology of varnish and Oriental tradition of miniature painting is used. Through a varnish painting a verity of small and basic caskets are decorated. The painting is carried out using natural dyes with egg yolk base.

Jewelry. The art of jewelry making in [Uzbekistan](#) has its long traditions. From the century to century zargar masters have created unique jewelry items. In the second half of the 20th century jewelry became an industrial product, which resulted to some unification of jewelry items, a gradual simplification and distortion of traditional forms of ornaments, and the refusal of some kinds of technology. [14]

Musical Instruments. Overriding the street noise, the blaring inviting karnay sounds are being heard above the city. People are in a hurry having heard this invitation for celebrations: for wedding ceremony in mahalla, or may be for the opening of a new exhibition. Everybody knows that karnay is one of the most ancient Uzbek musical instruments, but just a few are aware that in the Middle Ages it was a military signal instrument. [15]

Oral Traditions and Expressions. Ever since their inception, men have been trying to co-exist and interact with one another, because mutual cooperation has saved them from various natural disasters and shown ways to overcome the difficulties of life. Folk heroes, such as Alpomish, Gorogli, Muqbil toshotar, Ozoda Chehra, became the heroes of folklore. Nowadays, Uzbeks are enjoying their favorite songs, fairy tales, askiyas, legends, riddles, myths and narratives and latifas, as well as genres of Uzbek folklore. These spiritual values created by our people are a part of the cultural heritage and values of the whole Uzbek people.

Alla (Lullaby) is a song that is sung to infant babies by their mothers while lulling them to sleep. Its lyrics are created taking into consideration the mother's mood and condition in an impromptu

manner. Mother enters into communication with her baby, who does not understand any word, with the means of words and music and tries to pacify the baby by expressing her dreams and expectations

Yor-yor. Yor-yor is one of the folk songs. It is mainly sung by women during wedding ceremonies while sending bride to the groom's house. The main four lines are sung solo by a woman and other women joined to its chorus.

Bakhshichilik - Folk Narration. Performer of the art of doston narration, bakhshi-poet — is an artist who sings and tells songs and doston by heart and delivers them to the next generations. Bakhshi should know the people's entity and culture, the history of the land he is living in and has to be master of the art of singing.

Doston Performance. The art of doston narration — is one of the bright examples of poetic folklore's epical traditions and intangible heritage. Initially the compositions were created in the form of songs, without any musical instruments, subsequently, the songs with the accompaniment of some musical instruments, such as drum, qo'biz (string instrument), etc, were created.

Lapar. One of the ancient genres of folk creation-lapar-has its own rich history. Lapar songs are sung by famous performers on holidays, peoples ceremonies, on wedding parties which are held at night in the bride's house, such as "Qiz Oqshomi" (Girl's night), "Qizlar bazmi" (Girls' party) and "Lapar kechasi" (Lapar night). Boys and girls said romantic ghazals (poems), confessed on love and gave presents to each other standing side by side.

Mavrigi. About ten men in the clothes peculiar to ancient Iranian (Zoroastrism to be more precise) times, sing national melodies sitting and playing drum. Behind the curtain a woman dancer comes with small steps in the harmony with the melody. By her movements she expresses romantic relationship between two lovers. Mainly, tambourine accompanies the songs, sung in authentic Farsi -Tajik.

Dance of Bukhara-Larzon. Dance of Bukhara-is one of the Uzbek national styles of dance. It got formed and evolved in the territory of the present Bukhara region. Its distinctive characteristics are courageous and intensive movements, bindings, half-bindings and richness in boughs and spinning's. Man dancers wore jackets that are sewed widely from adras; brocade or gold brocaded yaktak (light summer robe), and wrapped their heads with silk salla (long, white fabric worn by Muslim men) and wore heeled velvet boots to their feet. [16]

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For the execution of the first initiative Gijduvan Secondary School 23 actively held open seminar on April 23, 2019 regarding music, painting, literature,

theater, and other types of art. Following some fragments form the classroom activities:



Picture 1. Respect for the lesson



Picture 2. Arc Craft lesson in progress



Picture 3. Gijduvan zardozi style



Picture 4. Teacher explaining new topic



Picture 5. Some hints on zardozi



Picture 6. Culture and art come closer

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Unity with Global Community

For further development of the first initiative **Study of the U.S. Institutes (SUSI) for Secondary School Educators**. The Study of the U.S. Institutes for Secondary Educators are intensive post-graduate level academic programs with integrated study tours whose purpose is to provide secondary educators (including teachers, administrators, teacher trainers, curriculum developers, textbook writers, ministry of education officials, and others) the opportunity to deepen their understanding of U.S. society, culture, values, and institutions. [17]

British Museum helps return stolen artefact to Uzbekistan

The British Museum has helped to recover an important medieval Islamic artefact that surfaced in a London gallery after it was stolen from a monument in Uzbekistan. The enormous calligraphic glazed tile – half a metre in height – had disappeared in 2014. The decorative Islamic calligraphic tile – 52.5cm (20.7in) high and 30.5cm (12in) across – had been prized off the Chashma-i Ayub monument in Vobkent. Its inscription, within a foliated scroll design, reads: “In the year five and six hundred” – which corresponds to AD1208-09. Thieves left a gaping hole after they removed it from the magnificent entrance facade of a 12th-century monument, just over 12 miles (20km) from Bukhara, the UNESCO world heritage site on the ancient Silk Road route. The theft was not officially reported, but an Oxford scholar who had recently returned from the historic site spotted it in a catalogue published by the Simon Ray gallery. [18]

Integration of higher education is impulse for secondary schools

Uzbekistan State Institute of Arts and Culture was one of the first universities of art established in Uzbekistan. It was open in 1945 in Tashkent as theatre and artistic art Institute a. n. Ostrovsky. The Institute's task was to prepare a professional theatre training for Central Asian Republics as Uzbekistan, Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan and the Autonomous Republic of Karakalpakstan. The first reception took place at the Institute in June 1945. The Institute, that prepares the professional staff in the fields of cinema, television, theatre and design, has provided the entire Central Asian region with directors and actors. Today, more than 1600 students at both bachelor and master level are being educated at the Institute. The teaching staff consists of 225 employees. [19]

Google Arts & Culture

The Fund for the Development of Culture and Art of Uzbekistan and Google Arts & Culture have signed an agreement on the placement of an online catalog of museum collections in Uzbekistan, the

Podrobno.uz reports. As a result, the digital collection and two online exhibitions have already been launched on the platform the other day. At the same time, the foundation became the first Google Arts & Culture platform partner from Uzbekistan. The presence of the museum collections of Uzbekistan on Google Arts & Culture will provide an opportunity to expand the boundaries of the diversity of cultures of the world online platform. Now users from anywhere in the world can access the presented exhibits.

Google Arts & Culture is an online collection of exhibits from 1200 museums, galleries and other organizations in 70 countries. Google Arts & Culture provides an opportunity to visit world exhibitions and study works of art in the smallest detail. Also here are the history and publications on world culture and art, photographs, videos and manuscripts, tours of cities and monuments of architecture, as well as the wonders of nature. At the next stage, Google Arts & Culture plans to develop 3D tours for the museums of Uzbekistan. [20]

5. OUTCOMES AND FINDINGS

As for the we are secondary school teachers tried studying art and culture of our great history. Globalization of the education we have been understanding cost and value of the such an important historical customs and crafts of our region. At classes we teach students with deep understanding concept of art and culture in both pre-Islamic and Islamic ages. At the age of science and technology we are using absolutely new methods and approaches to teach our young generation and analyzing how education really related with business and world community. First initiative out of five was relevance due to from the school ages students must except art and culture are idea without borders. It helps to cooperate, united and live in community such a small planet like Earth in peace and joy. Our research topic helps to everyone who likes his/her country, heritage, art and culture understanding prospective perspectives from the past to the future with great respect.

During this research following findings can be presented:

1. Concept of Art and culture are beyond the country;
2. First initiative directed to help relationship education with business;
3. Recognition by West our art and culture is not a new phenomenon;
4. Uzbekistan with its reach art and culture is considered one of the restricted hot points of the world;
5. Global community cooperation is upcoming in new phase;
6. Integration of higher education is impulse for secondary schools;

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7. Learning art and culture at schools motivate students to become skilled and talented as famous fathers were in past during school ages;

8. Distributing Uzbek Branding and Styling to school students.

6. CONCLUSIONS

In conclusion, culture and art are one of the important lifestyles of humanity. Form the social prospective Uzbek students trying learning and

understand given subject broadly at schools. Seminars, workshops and master classes are only for the purpose of imaginative thinking, practical experiments some art craft lessons and musical instruments professionalism or engraving, etc. If students understand historical customs and culture, they will evaluate any nations value and dignity for further economic development in the global community from the school ages.

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THE CRITERION FOR INCREASING THE POLITICAL PARTICIPATION OF WOMEN IN THE WORK OF CIVIL SOCIETY INSTITUTIONS

Abstract: This article examines the role and place of civil society institutions in Uzbekistan in increasing the socio-political activity of women.

Key words: civil society, legal culture, women's activism, non-governmental non-commercial organizations, community unions.

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Classifiers: Policy. Innovations. Theory, practice and methods.

Introduction.

The process of strengthening the independence of Uzbekistan, its socio-economic development, the establishment of a democratic state based on a free market economy and civil society is directly related to the Law "On Public Associations in the Republic of Uzbekistan", adopted by the Supreme Council of Uzbekistan on February 15, 1991. "For the first time in the history of the country, the independence of civil society institutions and public associations has been recognized as a legal entity acting separately from government and government" [1, p.42]. Particularly, the Constitution of the Republic of Uzbekistan provides the basic principles for the non-governmental and non-profit associations, and creates favorable conditions for the development of a wide range of organizations that represent the interests of all segments of the population. In this process, the issue of political and legal culture and socio-political activeness of women constitutes more than half of the country's population. The liberalization of the state and society in all sectors of the political sphere and raising the political activity of the population is one of the main tasks of forming a political culture based on national and universal values. "Civil society institutions, nongovernmental nonprofit organizations are now becoming an

important factor in protecting the democratic values, human rights and freedoms and legitimate interests, creating conditions for the realization of their potential, their social, social and economic activity and legal culture, helping to balance [2.-p.6].

Indeed, today we have been targeted at building a civil society by introducing the concept of "from a strong state to stronger society" to the development of the developed countries, whilst fully overseeing human rights and interests, creating a free and prosperous life. In this regard, it is the time of deepening democratic reforms and modernization of the country, primarily aimed at improving the state and society building. Further improvement of the role of executive power in reforming and modernizing the public administration system has become a necessity to develop a concept of administrative reform to regulate democratic reforms in a society [3, p.34].

President of the Republic of Uzbekistan Sh. Mirziyayev, the "Strategy for Action on the Development of the Republic of Uzbekistan for 2017-2021" adopted on February 7, 2017, is primarily aimed at this goal. Part 4 of the Action Strategy focuses on the priorities of social development, including the promotion of women's socio-political activity, their role in government and public administration, the employment of graduates of

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women's and professional colleges, focusing on the broader involvement, the further strengthening of family foundations. The role of civil society institutions in the successful implementation of the above issues is immeasurable.

In Uzbekistan, extensive work is being carried out to ensure organizational and legal conditions, economic and legal guarantees for the formation of non-profit and public organizations during active democratic renewals and modernization of the country, and to ensure their active participation in society. The Law of the Republic of Uzbekistan "On non-governmental and non-commercial organizations" and the joint resolution of the Councils of both chambers of the Oliy Majlis of the Republic of Uzbekistan "On measures to strengthen the support of non-governmental and non-commercial organizations, other civil society institutions" serves as an important legal basis. These documents are aimed at the development of public organizations in the country, strengthening their material and technical base, strengthening the role of public organizations in raising women's socio-political activity, their active participation in the socio-political life of the country, and the broader access to women and attracts them [4, p.65].

At present more than 9000 NGOs and more than 200 non-profit organizations are operating in Uzbekistan. Many of them work in areas such as women's legal and economic education, support and development of entrepreneurship, women's health, protection of women's knowledge and skills, and moral support. Particular attention is paid to the consistent development of non-profit non-profit and public organizations as an essential condition for increasing women's socio-political activity [5, p.23].

In particular, the basis of social activity is the political and legal culture of the person. It is impossible to become involved in organizing and managing a community without knowing which goals and mechanisms it is based on. Social activity is, in essence, a voluntary, collective action that moves people for free time. In society, non-governmental and self-governing bodies are the institutions for organizing people's social activities. It was their political and legal activity in organizational activities [6].

One of the key features of civil society is the free functioning of democratic institutions based on high legal and political culture and their equitable relationship with government agencies. "Let these institutions and organizations have a decent place in the decision-making system, the protection of the interests of the social groups and structures they represent." In this sense, the establishment of partnerships with non-governmental non-profit organizations with local authorities is now important in the socio-political life of society. In particular, the Law "On Social Partnership", adopted in 2014, was

the main stage in the implementation of social partnership in the country. The social partnership is the cooperation of state bodies and other civil society institutions with the implementation of socio-economic development programs of the country, including the implementation of network, legal programs, as well as other legal acts and other decisions concerning rights and legitimate interests of citizens [7].

Nowadays, the main objective of implementing social partnerships in Uzbekistan is the implementation of social partnerships in the implementation of major social projects among state and civil society, which leads to the state's being strong, sustainable and effective, since it is widely accepted by the public, which provides support.

In recent years, the Decree of the President of the Republic of Uzbekistan "On Measures to Support the Development of Civil Society Institutions in Uzbekistan" and other documents have been adopted, including the Laws "On Public Funds", "On Funding", and the role of an important factor in strengthening the social activity of civil society institutions doing it.

Socio-political activity is an important concept which covers a wide and diverse range of activities. This activity is not a government-oriented act, but rather a behavioral act aimed at managing the lives of the community. Non-governmental non-profit organizations and public associations of women in the Republic of Uzbekistan have become part of social life of society, but have not yet become a social movement that can influence the most important events. Because their lack of co-operation with government agencies has a negative impact on the activities of these organizations. At the same time, as President of the Republic of Uzbekistan Shavkat Mirziyayev noted in his appeal to the Oliy Majlis on 29 December 2018, "it is a pity that there are still more than 13,000 women who are in difficult life in the country and are not employed".

It is delighted to see a growing share of women among many public organizations in Uzbekistan, including among political parties and their structures, particularly among elected members. For example: currently in the Senate% of the Senate,% of the Legislative Chamber. However, there is another aspect of the matter: not only political parties should strive for women. Political parties should seek a thorough investigation into the building of a democratic state and civil society to raise women's legal literacy in addressing the issues related to entrepreneurship, to further advocacy and propaganda among women, and to build leadership capacities. At the same time, "Women's Wing" of political parties is working on this issue. In particular, various social projects, grant programs, practical workshops, contests, roundtables have been instrumental in promoting women's active participation in society. "The further strengthening of the role of non-state

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non-profit organizations and other civil society institutions at the current stage of the development of the country is an indispensable factor in the achievement of the set goals set forth for the formation, democratization and integration of our country into the international community, and it is unnecessary".

As long as the society has undergone radical changes, civil society institutions can not stay away from these processes. In that sense they must contribute to the elimination of society's problems "[8.15].

The following points and conclusions can be summarized as follows:

1. The role of women in the activities of non-governmental non-profit organizations and public associations plays an important role in supporting and encouraging members, enhancing their socio-political activity, and enhancing their knowledge and skills. It plays a major role in building a democratic state and civil society [9].

2. NGOs and public associations aimed at protecting the interests of women are aimed at ensuring the socio-political, economic interests, interests and interests of women, who constitute the vast majority of the population. Their socio-political, psychological and spiritual impact is of paramount importance,

3. In implementing the concept of transition from a strong state to a strong civil society in our social life, it is desirable for civil society institutions, NGOs and

public associations to carry out many social projects that express their interests, interests and needs.

4. It is important to emphasize that the role and place of the media in the promotion of NGOs aimed at protecting women's interests is also important today.

It is necessary to say today President Shavkat Mirziyayev's initiatives are being carried out by the Presidential Councils of the Republic of Uzbekistan in all regions of the Republic to hear about the challenges and problems of the 33 million people of Uzbekistan. In addition, the electronic communication service has been established and the Presidential Party is functioning. On the basis of the idea that "public institutions should serve the public, not the public," the focus is on improving the performance of public administration in order to increase the effectiveness of public services in the country, and administrative reform is being carried out [10]. In turn, the goal of the administrative reform is to improve the public service delivery system and to elevate the public administration system to a new level, taking into account the interests of all segments of the population.

In conclusion.

Women's movement has a great potential in the functioning of civil society institutions operating in Uzbekistan. They combine their strength to protect women's rights, actively participate in democratic processes in the country, and achieve gender equality, with their work creating a foundation for the future generations.

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HAJJ: THE WAYS OF PILGRIMAGE OF MUSLIMS OF CENTRAL ASIA IN THE LATE XIX - EARLY XX CENTURIES

Abstract: The article outlined three routes of departure for the Hajj of Turkestan Muslims in the late 19th - early 20th centuries: the overland route through Iran, the southern route through Afghanistan, India and the Indian Ocean and the northern route through Istanbul, as well, especially the directions, as well as the policy of the Russian Empire associated with the Hajj pilgrimage of the population of Turkestan.

Key words: Hajj, Hijaz, Turkistan, Bukhara, Istanbul, Russian Empire, Odessa.

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Introduction

Hajj - pilgrimage to Mecca as one of the five pillars of the religion of Islam, is obligatory for a Muslim only if he has material and physical abilities and in the absence of any obstacles. Central Asian Muslims made pilgrimages for many centuries. At the turn of the twentieth century, the process of making pilgrimages by Central Asian Muslims to Mecca and Medina was very difficult and for the implementation of this rite they had to go a long, sometimes dangerous to life and very difficult path.

For the commission of the pilgrimage ceremony, the Muslims of Central Asia had their own routes to Mecca through Afghanistan and India. However, after the conquest of Turkestan by Russia, the tsarist government faced the task of controlling the movement of the Muslim population, since on the one hand it did not want political influence on the Muslims of Turkestan, and on the other hand did not want to lose revenues from Muslim travel on the Hajj. Indeed, it was only due to the non-collection of fees when issuing foreign passports that the state treasury of the Russian Empire suffered great damage. Solving this

problem, the tsarist government tried to streamline and take control of the process of making pilgrimages and stop the drain of money spent by Muslims on the Hajj.

Materials and Methods

In addition, pilgrimages to Muslim holy places from the point of view of the tsarist government had other influences on the situation in Turkestan. Speaking about the political influence of the pilgrimage, I would like to say that there were different points of view on the pilgrimage and its influence on the Muslim population. We can cite as an example the statements of the Dutch Arabic scholar and traveler Snook Hurgronje, who lived in Mecca under the guise of a Muslim sheikh, who in his work on Mecca [11:89] noted that Hajj was a flammable element, for their part, they were contrary to the interests christian government. Developing his thought, the author of this work explained that the pilgrims received two strong impressions, namely, that Mecca was a religious, and Constantinople was the political centers of the world.

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In Tsarist Russia, there existed peculiar points of view on this score, among which two main ones prevailed then in the administration of Turkestan and in the military department. The first point of view on the hajj was based on a report made by Captain Davletshin. In 1898, on the instructions of the War Minister and Adjutant General Kuropatkin, captain Davletshin, a Muslim by religion, carried out a secret official trip to Mecca. In his report, written on his return, Davletshin noted that the hajj, from his point of view, had no political significance, the pilgrimage to Mecca did not lead to any rapprochement of Muslims of different countries, finally, that this idea itself - the unity of the Muslim world, did not exist. ... The atmosphere of the hajj itself, the same traveler reported, is a ritual of a purely religious nature, very short in time, very fussy and hurried, with the general consciousness of danger that an epidemic is about to break out, was not at all favorable to this idea and did not Disposed to political demonstrations [15:100].

The second and opposite point of view was based on the statements made on this occasion by Colonel Mustafin, set forth in a note about the Hajj attached to the letter of the Office Governor Governor-General dated March 30, 1909 to the director of the Department of Spiritual Affairs of Foreign Confessions A.N. Khoruzhnu. He wrote that the association of Muslim pilgrims was sufficiently strong, despite their differences in nationality. Prolonged time, full of hardships, difficulties and dangers of travel, as well as the sameness of impressions, connected travelers with each other by close ties not only for many years, but for a lifetime. ... Hajj, further reported by the same source, was one of the ways of bringing Muslims closer all over the world. The author of the note argued that such a value of hajj compels him to be very careful and, in any case, not to encourage him not to reduce the price of the fare, nor to create such amenities for travelers to Mecca that would put pilgrims in exceptional conditions with other travelers. In addition, the Colonel's note noted the need for organizing observation of pilgrims, both on the road and at home, at their place of permanent residence, upon their return to Russia [15:101]. Summarizing all the above, he noted that the maintenance of the Hajj, in any case, should not have been among the state objectives in relation to Muslims. According to Colonel Mustafin, the hajj, serving as one of the important stimuli for the manifestation of militant Islam, can be left to itself and, by no means, support it. The open goal of the country's internal policy should have been a gradual weakening of consciousness in the necessity of pilgrimage to the holy cities of Mecca and Medina [15:102] prescribed by the Quran.

On the other hand, as was said, if you look at the hajj as an economic factor and a factor controlling the movement of the Muslim population, the royal government was not only worried about the political

significance of the hajj, but also tried to stop the leakage of money spent by the Muslims on the hajj. For example, the tsarist administration after the uprising of 1898, in punishment banned the implementation of the pilgrimage to Mecca. In 1900, when this ban was lifted, 10,000 Muslims [17] made pilgrimages from the Fergana region alone in the same year. Over the decade, i.e. in the period up to 1913, when records were kept of pilgrims leaving, their number doubled. Annually, according to the figures presented, up to 50,000 Muslims of Turkestan made a hajj to Mecca and Medina. Each pilgrim spent an average of 600-700 rubles. The rich spent about 3,000 rubles [2:139], but there were also such Muslims who carried out a pilgrimage with insufficient means - they were mostly old people. As the newspaper "Turkestan Gazette" reported, many of these old men died from exhaustion on the way [4].

The wealthy people of Turkestan, acquiring real estate in Mecca and Medina, opened Hadzhihan to poor pilgrims at their own expense. According to the newspaper "Turkestan Gazette", out of a total of 50,000 people who made pilgrimages every year, one-tenth of them were rich people, in digital terms it was about 5,000 people, while they spent an average of 3,000 rubles each, which amounted to about 15.000.000 rubles. The rest of the pilgrims in the amount of 45,000 people, who spent an average of 600 rubles per person, spent 27,000,000 rubles. Thus, even taking into account the inaccuracy of the available digital data, one can still say that the total amount spent annually by the Turkestan pilgrims reached impressive sizes and amounted to 42,000,000 rubles [2:140]. To stop the outflow of funds and to assist in the collection of this money, they wanted not only representatives of the tsarist administration, but also representatives of the local population, who actively cooperated with the tsarist administration in Turkestan. So, one of the local entrepreneurs Saidgani Saidazimbayev, who worked as the main agent of the voluntary fleet in Turkestan, wrote to the Chairman of the Council of Ministers about the financial benefits of sending pilgrims by rail and steamboats, which is not indifferent for the state where millions of money will go - Persia and India or at the box office of state railways. "Each pilgrim reserves up for a hajj at least 1000 rubles, and a good half of this money can and should remain in Russia. When the number of pilgrims increases to tens, or maybe hundreds of thousands, the income of the Voluntary Fleet and state railways will be very large," stated Saidgani Saidazimbaev's [15:6] memo.

Proceeding from the interests of Russian transport companies and the Russian state treasury, one of the main tasks of the tsarist government was to redirect the flow of Muslims, going on a hajj, from the Afghan-Indian direction to Russia and streamlining pilgrimages in this direction. However, the main obstacle along this path was the absence of legal

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passports for most pilgrims. In the best way this business was in Bukhara. According to the data of the political agency in Bukhara, of all the Central Asian pilgrims, the lowest percentage of the passport-free ones were given by the Bukhara filed. This was explained by the fact that in obtaining foreign passports, the Bukhara applicants were in more favorable conditions than the Turkestan Muslims. Getting a passport for them was less difficult and costing much cheaper than in Russia. Those wishing to go to worship the holy places of Bukhara turned to Bukhara Kushbegi, in whose office without slowing down they made tickets for every 1 rub. 20 kopecks. Then these tickets were presented by the owners themselves or by the Kushbegi officials to a political agency that endorsed them the same day, charging 2 rubles for each visa. 50 kopecks (1 rub. 50 kopecks. Gold) [16:67]. In case those who wished to get passports did not live close to Bukhara, then pilgrims from the same locality sent ombudsmen to Kushbegi with the certificate of the corresponding Bek. The passports issued to Kushbegi were endorsed by a political agency and sent back to Bek for subsequent transfer. Thus, the registration of foreign passports for pilgrims in the Bukhara Khanate, cost only 3 rubles, 45 kopecks.

In his note addressed to the Minister of the Interior, the Turkestan Governor-General proposed to equate the Bukhara Muslims with regard to the costs of issuing passports to the expenses of their co-religionists in Turkestan. He considered it fair to increase the consular tariff for putting a visa in these passports to the extent that the total cost of each ticket was equal to the price of a foreign passport for Turkestans, which again led to the replenishment of the treasury.

In a note dated March 21, 1897, the Turkestan Governor-General also proposed that the Minister of the Interior of the Russian Empire also strengthen the cordons on the Russian-Persian border, and on the border with Afghanistan. According to the information available to him, part of the hajj was secretly performed from the Turkestan region and Bukhara through the Afghan borders to India [16:63]. This information is another indication that the Government of the Russian Empire was concerned about the secret departure of Muslims to Mecca and Medina. This, as mentioned earlier, on the one hand, prevented the exercise of control over the movement of the Muslim population, and on the other hand, caused damage to the state treasury at the expense of not collecting fees when issuing foreign passports. For this reason, the tsarist government obliged Central Asian Muslims to first obtain a foreign passport for the Hajj. To do this, they had to submit a document from the local police station that there were no barriers to this. The state treasury of the Russian Empire [5] had a good percentage of profits directly due to the collection of fees when issuing foreign passports. By

obliging Turkestans to obtain foreign passports, the tsarist government simultaneously solved two tasks - on the one hand it controlled the movements of the Muslim population of the conquered land, and on the other hand replenished its treasury at the expense of the Turkestans. The control began already at the stage of issuing passports to pilgrims on the basis of instructions from the Turkestan Governor-General to all district and police chiefs to supervise the pilgrims. At the end of the Hajj, the pilgrims were obliged to hand over the passport to representatives of the administration [1].

Other measures of the royal administration in Turkestan also helped to control. Thus, in accordance with the decree of the Turkestan Governor-General, dated January 23, 1901, at the time of receiving a passport, pilgrims had to provide written confirmation that they would go to Hejaz using Russian ports on the Black Sea, and come back from Hejaz to Theodosia or Batumi. Among other things, it was financially beneficial for the Russian railways and shipping companies. If Muslims could not get a passport on the spot, and they came to Sevastopol or Odessa without it, they should have received permission by telegram. It took a lot of time - they had to wait about two weeks, which was materially unprofitable, as it had to spend up to 40-50 rubles. Get the same passport in Turkestan came out much cheaper and could cost 17-18 rubles [13].

There were also problems redirecting the flow of pilgrims from Central Asia to Mecca, and back from Mecca to Central Asia. Often, pilgrims preferred to return to Central Asia through India and Afghanistan, as tickets for steamers following the Jeddah-Bombay route were much cheaper than tickets for steamships of Russian companies [7]. To reduce the flow of pilgrims from Hejaz to India, the manager of the consulate in Jeddah, Nikolsky, for example, even recommended that pilgrims should be left in the home country for a certain return security. At the expense of these funds, the consulate could send every poor pilgrim to Russia at his own expense. The amount of this security, as well as the issuance of loans, could be noted in the pilgrim's passport and subsequently returned to the persons and institutions to be returned from the security left in the pilgrim's home country [14:13]. For example, on December 18, 1895 a secret adviser from the Russian imperial embassy in Constantinople, a certain Nemidov, sent a letter to A. B. Vrevsky, the governor-general of Turkestan, in which he informed him that due to lack of funds for returning to their homeland, some pilgrims, among whom there were especially many Turkestans, were forced to remain in Hejaz [16:1].

Previously, the temporary non-return of the Turkestans did not raise questions. The poor or needy pilgrims, both in the Hejaz and other places to follow the hajj and from it, stayed for a part-time job and, having collected a sufficient amount of money, moved

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from city to city. The main thing was the implementation of the pilgrimage itself. However, employees of the Russian Imperial Consulate saw the reason for this in another. They believed that rural rural elders from the local population and the imams of the villages, without the knowledge of the district police officers and district heads, i.e. without control by the Russian authorities, they supplied the pilgrims leaving for worship, who often did not have sufficient funds, with certificates of their signatures or released them without any kind. To stop the secret departure of pilgrims, they offered in the form of experience, at least for two years, passport-free pilgrims who did not have sufficient funds to return to their homeland, send by boat through Constantinople to Batumi. And from Batumi, by staying order, send a residence to the place, and then collect all travel expenses from the relevant society, which gave them permission to leave.

The above-mentioned letter of Nemidov was sent to the military governors of the regions of the Turkestan general-governorship. Already on January 23, 1896, the military governor of the Fergana region expressed his negative opinion about the proposed measures to keep the Turkestan Muslims, who did not have sufficient funds, from pilgrimage to Mecca [16:9]. He believed that the proposed measures are not only inconvenient, but also inexpedient, especially since the implementation of the proposed measure will not be accompanied by a weakening of the pilgrimage of Muslims who are poor in material opportunity to perform the Hajj, but by strengthening it. According to him, a Muslim who did not have sufficient funds and driven by the desire to bow to the sacred places of Islam, will know that he is not threatened with the possibility of not returning to his homeland, for all the costs of his return journey will be paid for by the society to which he belonged.

On October 25, 1896, the Ministry of Internal Affairs sent a note to the Turkestan Governor-General on the streamlining of the Muslim pilgrimage movement [16:9]. From the office of the governor-general, this note, 32 pages long, was sent to the military governors of the regions of Turkestan. After the conclusion on this issue made by the military governors of the Syrdarya, Fergana and Samarkand regions, as well as a political agency in Bukhara, the Turkestan Governor-General, Lieutenant General A. B. Vrevsky, March 21, 1897, sent a reply to the Minister of Internal Affairs. It presented proposals for the settlement of the Hajj in the Turkestan, Bukhara and Khiva khanates [16:62]. The drafters of the note expected to increase the income of the treasury from issuing passports, but at the same time they considered it necessary to reduce the cost of passports, and for supervision and control they suggested strengthening border cordons, i.e. actually offered to increase costs. In conclusion, sent by the military governor of the Samarkand region to the Turkestan governor general on January 8, 1897, it was said that imposing a fee for

a passport is the simplest and practical way to collect the tax and, therefore, the center of gravity of all considerations of the note focused on the passport [16:48].

However, the note compiled by the Ministry of Internal Affairs did not offer anything concrete for streamlining and facilitating the Hajj for pilgrims, except for the fact that it offered to conclude agreements with shipping societies. In this note, among other things, it was proposed to limit the issuance of foreign passports to pilgrims only to the known part of the year, i.e. a few months before the holiday of Kurban-bairam, with the assumption of the absence of Muslims abroad for the rest of the time only with the special permission of the authorities. The Turkestan Governor-General, familiar with the situation on the ground, in turn, considered the proposed measure extremely useless, since they knew that Muslim pilgrimage usually took place all year round, increasing only in certain months. The pilgrims went on a pilgrimage when circumstances allowed them, while depending on the availability of material means, they went to sacred places without stopping, with more or less long stops, trying only to achieve the goal of their journey by a certain time.

In a note sent to the Minister of Internal Affairs, the Turkestan Governor-General reported on the situation in the Bukhara and Khiva khanates. He noted that the implementation of any reforms in the pilgrimage, in a country with a Muslim population, could cause strong and undesirable discontent and even unrest. In his opinion, it was also inconvenient to collect collateral in ensuring the return of pilgrims to their homeland. These were some measures taken by various departments of the tsarist government to ensure control over the movements of the Muslim population and methods of replenishing the state treasury. Significantly, a better understanding of the situation was shown on the ground by representatives of the Governor-General, although the measures they proposed were also quite superficial.

If we talk about the routes of Muslims to the places of pilgrimage, then in the late XIX - early XX centuries. Muslims of Central Asia made pilgrimages using water and rail transport. They first traveled by rail to Odessa, Sevastopol, Feodosia, Batumi, and then, to Hijaz, by water [12]. From Tashkent to Odessa, pilgrims traveled in cars of different classes. For example, from Tashkent 3 times a week, and from Samara daily, two 2nd-class carriages left, and, in addition, third-class carriages to a thousand Muslims traveled to Odessa [7]. Up to 60% of these cars were used when leaving Tashkent, and about 20% when leaving Samara. The rest of the wagons were used on departure from Kabuls, Turkestan, Orenburg and Penza. In wagons of the 1st, 2nd and 3rd classes of postal trains, pilgrims reached Odessa in 2.5 days, and in wagons of the 4th class of a freight train, they arrived in 12 days [8]. The fare in a third-class carriage

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from the cities and stations of Turkestan to Odessa, Feodosiya and Batumi ranged from 25-28 rubles [8:№41]. An important point in the organization of pilgrimage was the organization of the so-called. "Hadzhihan" - special hotels where pilgrims could stay. One of the first to do this was Saidgani Saidazimbayev at the beginning of 1908, who, being the main agent of the voluntary fleet in Turkestan, organized the Hadzhihan in Odessa, a place where Muslims stayed until leaving for Hejaz. In accordance with the decree of the governor-general of Odessa, Major-General Tolmachyov, the owners of hotels and private houses could provide places for Muslims who make pilgrimages only with the permission of the governor-general [13]. Pilgrims in Odessa could get off the train only at one station, where special agents took them to Hadzhihan. Muslim pilgrims could leave for other places only in exceptional cases and only after a medical examination, because one of the reasons that complicated the pilgrimage was the difficult health situation in Hejaz and other transit cities on the way to the place of the Hajj. Almost every year there have been observed outbreaks of diseases such as cholera, plague.

As a result of the spread of these diseases, 20 to 50% of pilgrims [16:15] perished. Considering this, medical observation posts were established in the cities of Batumi, Feodosiya, Baku, Krasnovodsk. Prior to boarding the ship, pilgrims were checked by the city doctor, the medical staff of the sea-going vessels and the Hajihan. Violators of this decree were sentenced to three months in prison or a fine of 3,000 rubles [3]. After returning, pilgrims mostly passed through quarantine points of Russian ports. Also for medical purposes, pilgrims bathed in the bath, while at the entrance to the bath they were given a towel to close the lonely places, and their clothes and other things were disinfected. The mark of disinfection was put in the passport, but if there was none, then by law the pilgrims themselves were responsible for this [9]. By 1902, this problem was also highlighted in the pages of the periodical press of Turkestan. They had different proposals for the implementation of the pilgrimage. In particular, it was proposed to go to make pilgrimage using the port of Sevastopol, since at that time in Odessa there was an epidemic of cholera and plague. Although, in spite of everything, representatives of the agency of the voluntary shipping company, in opposing the activities of their rivals, took various measures to ensure that the pilgrims did not travel through Sevastopol. In order of information, I would like to inform you that on the route Sevastopol - Hejaz and back to Russia there were three steamboats, and, for example, from Batumi - one steamboat. If pilgrims made pilgrimage through Istanbul, then, say, in the afternoon, they traveled around the city, and in the evening they returned to the ship. The price of a ticket from Sevastopol and Batumi to Hejaz and back to Feodosia in cabins of the 1st class

was 250 rubles, in cabins of the 2nd class - 200 rubles, and in cabins of the 3rd class - 100 rubles [10]. Passengers of all classes were provided with beds, free hot and cold water, as well as a separate place for ablution; also allowed to take menkal for cooking. Steamships from Hijaz to Feodosia went for 10-12 days.

The pages of the periodical press of Turkestan often proposed measures to streamline the pilgrimage. For example, in one of these articles it was said that pilgrims could take tickets directly to the shipping company, bypassing the intermediaries representing the voluntary shipping company, in which case agent services could be provided by railway employees who should have provided all the necessary data. They also said that the administration of the railways needed the services of a Muslim translator to accomplish this goal [6]. In addition to this path, about 4-7 thousand pilgrims annually went through Samarkand and Bukhara to Afghanistan and then on the way from Peshawar to Bombay by rail [16:19]. Following this route, pilgrims could easily bypass all passport requirements, especially since this route has been used by pilgrims for centuries to travel to Mecca.

The most wealthy people of the Samarkand region went to Mecca through Constantinople and at the same time spent on the road, not taking into account the cost of a passport and luggage: 10 rubles to Krasnovodsk. 50 cop., To Baku 4 rubles. 50 cop., To Batumi 9 rubles. 10 cop., To Constantinople 9 rubles., To Jeddah 40 rubles. The time spent on the road was about 25 days, while counting 50 kopecks each. a day on food took 12 rubles. 50 cop., And all at a minimum spent 85 rubles. 60 kopecks Using the route through Mazar-i-Sharif, Peshawar, Bombay, most of the pilgrims traveled on their horses or donkeys to Peshawar. In this case, the total costs were as follows: in Afghanistan, a fee was collected for a pass certificate in the amount of 40 kopecks per person, 2 rubles per horse and 1 ruble per donkey. There were no other fees. On the road to Peshawar spent about 20 rubles. Horses or donkeys in Peshawar were usually sold and further to Bombay they followed the railway, the fare for which was 12 rubles. The cost of a ticket for the steamer to Jeddah was 10-20 rubles, but sometimes the fare was free. In general, 49 rubles were spent. 40 kopecks, travel time was 40 days and, considering the cost of food at the rate of 50 kopecks. per day it was 20 rubles. The maximum was spent up to 70 rubles [16:49]. one way. Following through Constantinople to Jeddah, they spent, including the cost of a passport, consular fees and food on ships, not taking into account the cost of a passport and consular fees on the way back 55 rubles. 10 kopecks. Some pilgrims stocked up with goods and sold them along the way, and, for example, the artisans left without any money at all and earned themselves in cities along the way. Passports they never asked. All more or less wealthy pilgrims went

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to Hejaz from Bukhara by rail and by boat along the Caspian and Black Seas to Constantinople, from where they proceeded to Jeddah in the usual way on Russian and Turkish ships. This way allowed the pilgrims to determine with sufficient accuracy the duration and cost of the trip and, accordingly, leave Kurban Khayit about a month before the holiday, so that this day will certainly be spent in Mecca. The designated class of pilgrims ensured that the return journey from Hejaz was provided from the material side, they often left money deposited in the consulate of the Russian Empire in Jeddah for returning home. The pilgrims were financially secure, they returned to Bukhara the same way through Constantinople, because the roundabout route through India, of course, was associated with various accidents, especially when following through Afghanistan.

Under completely opposite conditions, there were poor pilgrims, or individuals who found themselves in Jeddah without the means to return to their homeland. Both the former and the latter did not have enough money to pay for a ticket for a steamer, mostly they preferred to go by steamer to Bombay for free or at a very cheap fare. From Bombay, pilgrims made their way with the material assistance of their co-religionists to Afghanistan or through Kashmir to Kashgar and further to the Fergana region. In Afghanistan, the pilgrims made their way with great hardship and stayed on the road for a long time, taking advantage of the charity of their fellow believers. In some cities of Afghanistan there were special caravanserais for returning pilgrims, who were provided with possible assistance from the authorities and local merchants.

Conclusion

Making a conclusion, I would like to say that in the pre-revolutionary period, the tsarist government, acting by the method of carrots and sticks, achieved some success in this direction. Strengthening the

borders and obliging Muslims of Turkestan to obtain foreign passports, it unsuccessfully redirected the flow of Muslims from the Afghan-Indian direction to the Russian one. Thus, the government, on the one hand, was able to strengthen control over the movements of Muslims, and on the other hand replenished the Russian state treasury. On the other hand, by creating some amenities, for example, special Hadjihan hotels for pilgrims, opened by representatives of the local population who collaborated with the tsarist administration, opening new rail and shipping routes, it also solved problems of an economic nature. Other measures of the tsarist administration, such as sending special agents to pilgrims, reports from representatives of consulates and Russian embassies abroad, helped them to control the mentality of Muslims and take measures to protect Central Asian Muslims from outside political influence. All these measures, taken together, helped the tsarist government to implement measures to streamline and control the process of making pilgrimages and to stop the outflow of large sums of money that Muslims spent on Hajj.

Speaking about the routes of the movement of Muslims to places of pilgrimage, I would like to once again mention the diversity of ways to the place of pilgrimage and how necessary this process was for the Russian side to study both for studying these routes and their political and economic component. In the process of studying these very routes of movement, various departments were involved, including the foreign representative offices of the Russian Empire. The interest in the economic component is especially noticeable: detailed details of the expenses of pilgrims on their way to the hajj sites are presented. Other interesting data is also presented. All this speaks of the serious interest of the tsarist government in preventing the diversion of large amounts of money and their further attraction to the state budget.

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VIBRATIONS OF THE ROD WITH DIFFERENT WAYS OF FIXING THE ENDS

Abstract: This article presents the equation of the transverse oscillation of the rod. Deviations of the axis points of the rod with transverse vibrations occur in the same plane. The basic assumptions and the equation of transverse oscillations of a straight rod are shown. The oscillations of a homogeneous rod hinged at the ends are considered.

Key words: vibrations of the rod, transverse vibrations of the transverse rod, the equation of transverse vibrations of the straight rod.

Language: Russian

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Classifiers: Applied mathematics. Mathematical modeling.

КОЛЕБАНИЯ СТЕРЖНЯ С РАЗЛИЧНЫМИ СПОСОБАМИ КРЕПЛЕНИЯ КОНЦОВ

Аннотация: В данной статье приведено уравнение поперечного колебания стержня. Отклонения точек оси стержня при поперечных колебаниях происходят в одной плоскости. Показаны основные допущения и уравнение поперечных колебаний прямого стержня. Рассмотрено колебания однородного стержня, шарнирно опертого по концам.

Ключевые слова: колебания стержня, поперечные колебания поперечного стержня, уравнение поперечных колебаний прямого стержня.

Введение

При выводе уравнения поперечных колебаний стержня мы будем предполагать, что в недеформированном состоянии так называемая упругая ось стержня прямолинейна и совпадает с линией центров тяжести поперечных сечений стержня. Эту прямолинейную ось мы примем за координатную ось x и от нее будем отсчитывать отклонения элементов стержня при поперечных колебаниях. Далее мы предполагаем, что отклонения точек оси стержня при поперечных колебаниях происходят в одной плоскости. [1]

При таких предположениях отклонения точек оси стержня при поперечных колебаниях однозначно определяются одной функцией двух переменных – координаты x и времени t :

$$y = y(x, t).$$

Эта функция удовлетворяет линейному дифференциальному уравнению в частных производных четвертого порядка, которое может быть построено следующим образом.

Кинетическая энергия колеблющегося стержня складывается из кинетической энергии поперечных смещений элементов стержня

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$$T_1 = \frac{1}{2} \int_0^l \mu(x) \left(\frac{\partial y}{\partial t} \right)^2 dx; \quad (1.1)$$

и кинетической энергии вращений элементов стержня вокруг осей, перпендикулярных к плоскости колебаний,

$$T_2 = \frac{1}{2} \int_0^l J_0(x) \left(\frac{\partial^2 y}{\partial x \partial t} \right)^2 dx; \quad (1.2)$$

Потенциальная энергия равна сумме трех слагаемых:

а) Потенциальная энергия упругой деформации (работа восстанавливающих упругих сил)

$$\Pi_1 = \frac{1}{2} \int_0^l EJ \left(\frac{\partial^2 y}{\partial x^2} \right)^2 dx; \quad (1.3)$$

б) потенциальной энергии прогиба от поперечной нагрузки $f(x, t)$

$$\Pi_2 = \frac{1}{2} \int_0^l f(x, t) y dx; \quad (1.4)$$

в) потенциальная энергия растяжения от продольной силы $P(x, t)$.

$$\Pi_3 = \frac{1}{2} \int_0^l P(x, t) \left(\frac{\partial y}{\partial x} \right)^2 dx. \quad (1.5)$$

Функционал S Остроградского-Гамильтона имеет вид

$$S = \frac{1}{2} \int_{t_1}^{t_2} \int_0^l \left[\mu(x) \left(\frac{\partial y}{\partial t} \right)^2 + J_0(x) \left(\frac{\partial^2 y}{\partial x \partial t} \right)^2 - EJ \left(\frac{\partial^2 y}{\partial x^2} \right)^2 + f(x, t) y + P(x, t) \left(\frac{\partial y}{\partial x} \right)^2 \right] dt dx. \quad (1.6)$$

Уравнение поперечных колебаний стержня мы получим, составив для функционала S уравнение Эйлера по формуле

$$\mu(x) \frac{\partial^2 y}{\partial t^2} + \frac{\partial^2}{\partial x^2} \left(EJ \frac{\partial^2 y}{\partial x^2} \right) - \frac{\partial}{\partial x} \left(P \frac{\partial y}{\partial x} \right) - f(x, t) y + \frac{\partial^2}{\partial x \partial t} \left(J_0 \frac{\partial^2 y}{\partial x \partial t} \right) = 0 \quad (1.7)$$

Это линейное уравнение четвертого порядка, составленное при самых общих предположениях относительно действующих на стержень сил, жесткости распределения массы.

В стержнях, длина которых значительно превосходит поперечные размеры, можно пренебречь инерцией вращения и опустить в левой части уравнения (1.7) последний член.

Положив $f(x, t) = 0$ и $p(x, t) = 0$, мы рассмотрим сначала свободные колебания однородного стержня с постоянными жесткостью EJ и погонной массой μ . Для таких колебаний уравнение (1.7) будет иметь вид

$$\frac{\partial^2 y}{\partial t^2} + c^2 \frac{\partial^4 y}{\partial x^4} = 0, \quad \text{где } c = \sqrt{\frac{EJ}{\mu}}. \quad (1.8)$$

Колебания однородного стержня, шарнирно опертого по концам. В этом случае интеграл, удовлетворяющий условиям на левом конце $\phi(0) = \phi''(0) = 0$, должен содержать функции, обращаемые для $x=0$ в нуль вместе со своими вторыми производными.

$$\phi(x) = BT(kx) + DV(kx). \quad (1.9)$$

Постоянные B и D найдутся из условий на правом конце ($x=l$). Если этот конец также шарнирно оперт, то

$$\begin{aligned} \phi(l) &= BT(kl) + DV(kl) = 0, \\ \phi''(l) &= k^2 [BV(kl) + DT(kl)] = 0, \end{aligned}$$

Откуда

$$T^2(kl) - V^2(kl) = 0.$$

В элементарных функциях

$$\text{sinkl} = 0.$$

Это уравнение и является для рассматриваемого случая уравнением частот. Из него находим $k_i l = i_\pi (i = 1, 2, 3, \dots)$ так как

$$k_i^4 = \frac{\mu p_i^2}{EJ},$$

то

$$p_i = k_i^2 \sqrt{\frac{EJ}{\mu}} = \frac{i^2 \pi^2}{l^2} \sqrt{\frac{EJ}{\mu}} (i = 1, 2, 3, \dots) \quad (1.10)$$

Таковы собственные частоты системы. Для собственных форм получаем уравнения

$$\phi_i(x) = B_i \sin \frac{i\pi x}{l} (i = 1, 2, 3, \dots). \quad (1.11)$$

Первые три собственные формы представлены на рисунке 1. Общее решение имеет вид

$$y(x, t) = \sum_{i=1}^{\infty} (M_i \cos p_i t + N_i \sin p_i t) \sin \frac{i\pi x}{l}, \quad (1.12)$$

где постоянные M_i, N_i находятся известным образом из начальных условий.

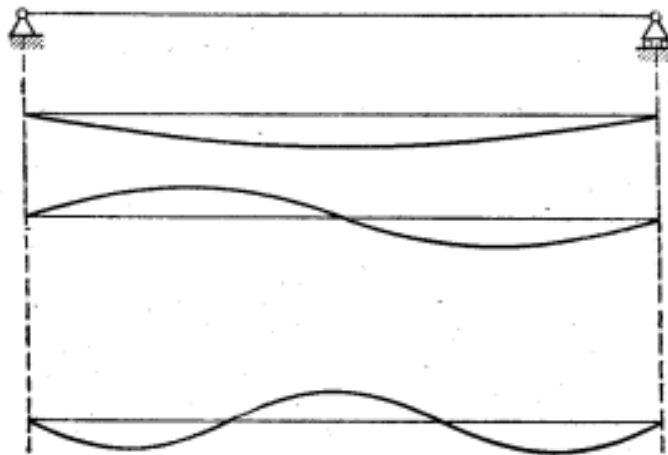


Рисунок 1

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б) Колебания стержня, жестко закрепленного концом $x=0$ и свободного на конце $x=l$. Краевые условия в этом случае

$$\begin{aligned} \varphi(0) &= \varphi'(0) = 0, \\ \varphi''(l) &= \varphi'''(l) = 0. \end{aligned}$$

Интеграл уравнения, удовлетворяющий условиям на конце $x=0$, имеет вид

$$\varphi(x) = CU(kx) + DV(kx).$$

Условия на конце $x=l$ выражаются уравнениями

$$\left. \begin{aligned} CS(kl) + DT(kl) &= 0, \\ CV(kl) + DS(kl) &= 0, \end{aligned} \right\} (1.13)$$

Откуда

$$S^2 - TV = 0 \text{ или } \operatorname{ch}kl \cos kl + 1 = 0.$$

По таблицам находим первые четыре корня уравнения

$$kl = 1,875; \quad 4,694; \quad 7,855; \quad 10,996.$$

Для первых четырех собственных частот получаем по формуле

$$p_1 = \frac{(1,875)^2}{l^2} \sqrt{\frac{EJ}{\mu}}, p_2 = \frac{(4,694)^2}{l^2} \sqrt{\frac{EJ}{\mu}},$$

$$p_3 = \frac{(7,855)^2}{l^2} \sqrt{\frac{EJ}{\mu}}, p_4 = \frac{(10,996)^2}{l^2} \sqrt{\frac{EJ}{\mu}}.$$

Уравнение i -той собственной формы составляем следующим образом. Из первого или второго уравнения (1.13) находим, подставив туда $k_i l$

$$\frac{D}{C} = -\frac{S(k_i l)}{T(k_i l)} = -\frac{V(k_i l)}{S(k_i l)}$$

Подставив это значение в уравнение получим

$$\begin{aligned} \varphi_i(x) &= C \left[U(k_i x) - \frac{S(k_i l)}{T(k_i l)} V(k_i x) \right] = \\ &= C \left[U(k_i x) - \frac{V(k_i l)}{S(k_i l)} V(k_i x) \right]. \end{aligned} \quad (1.14)$$

На рисунке 2 представлены первые три формы

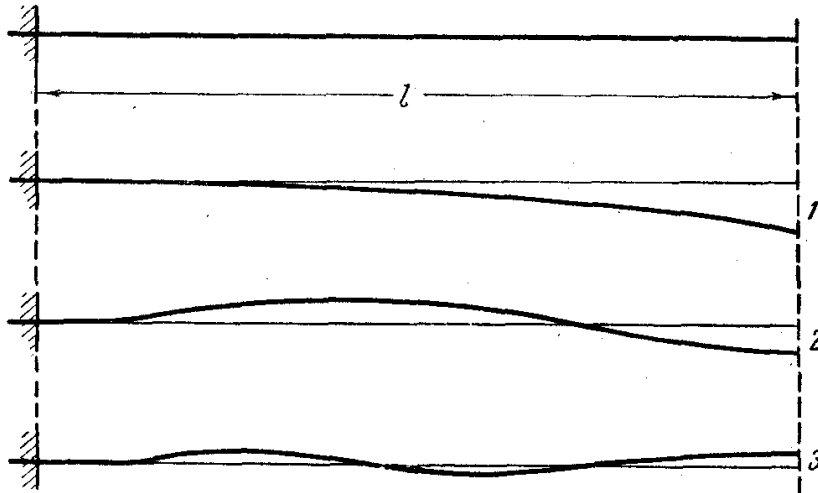
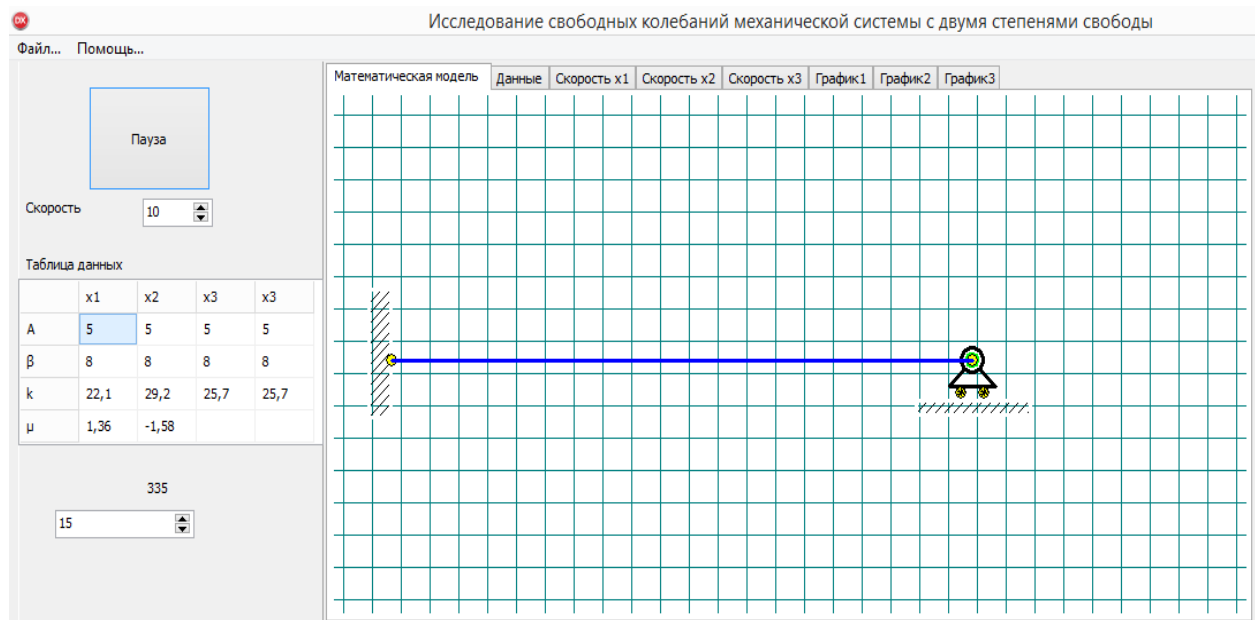


Рисунок 2

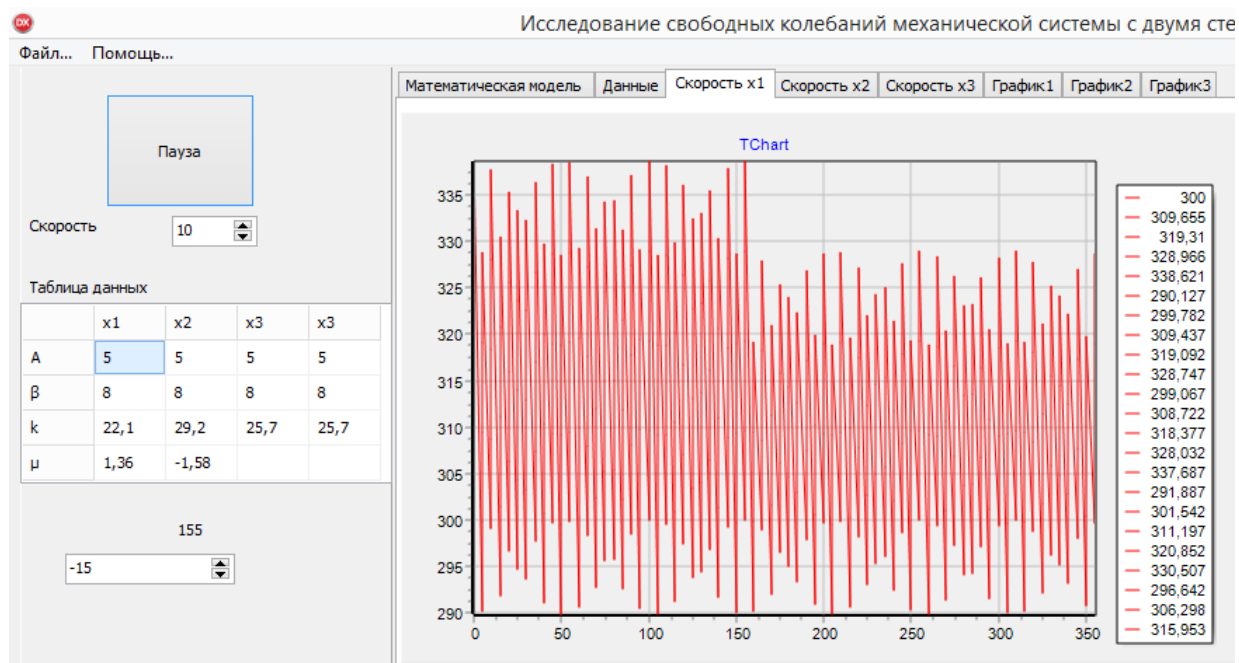


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NUMERICAL METHODS FOR CALCULATING VIBRATIONS OF STRAIGHT RODS OF VARIABLE CROSS-SECTION

Abstract: The article presents numerical methods for calculating the oscillations of straight rods of variable cross-section. The Ostrogradsky – Hamilton principle was used to derive the equations of longitudinal, torsional and transverse vibrations of the rod - equations. Which were then solved under given boundary conditions by known methods of differential calculus.

Key words: vibrational calculations, some special methods of calculus of variations, vibrations of rods, the methods of the calculus of variations.

Language: Russian

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Classifiers: SECTION 2. Applied mathematics. Mathematical modeling.

Численные методы расчета колебаний прямых стержней переменного сечения

Аннотация: В статье приведены численные методы расчета колебаний прямых стержней переменного сечения. Был использован Принцип Остроградского – Гамильтона для вывода уравнений продольных, крутильных и поперечных колебаний стержня- уравнений. Которые затем решались при заданных краевых условиях известными методами дифференциального исчисления.

Ключевые слова: вибрационным расчетам некоторых специальных методов вариационного исчисления, колебания стержней, методы вариационного исчисления.

Введение

Принцип Остроградского – Гамильтона был использован для вывода уравнений продольных, крутильных и поперечных колебаний стержня – уравнений, которые затем решались при заданных краевых условиях известными методами дифференциального исчисления. Устанавливая эквивалентность решения краевых задач дифференциального исчисления с решением задачи об экстремуме функционала, принцип

Остроградского – Гамильтона открывает возможность привлечения к вибрационным расчетам некоторых специальных методов вариационного исчисления. Сюда относятся прежде всего так называемые прямые методы вариационного исчисления, применение которых оказывается эффективным в приближенных расчетах собственных частот и форм колебаний стержней переменного сечения с неравномерным распределением жесткости и массы. Из таких

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методов наибольшее распространение в расчетной практике получили методы Ритца. [1]

Сущность метода Ритца заключается в приведении вариационной задачи к задаче на разыскание экстремума функции многих независимых переменных. Такое приведение осуществляется путем отбора из всех возможных допустимых функций, на которых рассматриваются значения функционала, некоторого специального класса функций, зависящих от конечного числа сначала неопределенных параметров. Подстановка таких функций в выражение функционала превращает его в функцию этих параметров, экстремум которой может быть найден известными элементарными способами.

По Ритцу значения функционала

$$S = \frac{1}{2} \int_{t_1}^{t_2} \int_0^l \left[\mu(x) \left(\frac{\partial y}{\partial t} \right)^2 - EJ \left(\frac{\partial^2 y}{\partial x^2} \right)^2 \right] dx dt. \quad (1)$$

рассматриваются на совокупности выражений вида

$$\psi(x) = \sum_{i=1}^n \alpha_i \psi_i(x) \quad (2)$$

где α_i – параметры, варьируя которые мы получаем нужный класс допустимых функции, а

$\psi_i(x)$ – так называемые базисные или координатные функции- специально выбираемые или задаваемые известные функции, удовлетворяющие по крайней мере геометрическим краевым условиям рассматриваемой задачи. На совокупности функций (2) соответствующий функционал обращается в функцию n независимых переменных $\alpha_i (i = 1, 2, \dots, n)$

$$S(\psi) = S(\alpha_1, \alpha_2, \dots, \alpha_n) \quad (3)$$

и его первая вариация

$$\delta S[\psi] = \sum_{i=1}^n \frac{\partial S}{\partial \alpha_i} \delta \alpha_i. \quad (4)$$

Найдя значения параметров α_i из уравнений

$$\frac{\partial S}{\partial \alpha_i} = 0 \quad (i = 1, 2, \dots, n) \quad (5)$$

И подставив их в (3), мы получим приближенное решение поставленной задачи.

Пример. Найти первую и вторую частоты колебаний балки с двумя сосредоточенными массами, каждая из которых равна массе всей балки, и с массой, равномерно распределенной на средней трети длины балки.

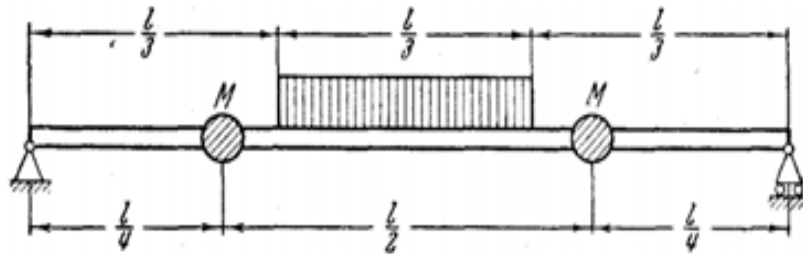


Рисунок 1. Расположение масс.

Балка опирается концами на шарнирные опоры. Обозначим через μ постоянную погонную массу балки. Пусть $\mu_0 = \mu$ – погонная масса

нагрузки среднего участка; $M = \mu l$ – масса каждого сосредоточенного груза. Тогда для максимальной кинетической и потенциальной энергии будем иметь выражения

$$\left. \begin{aligned} 2T_{max} &= \mu p^2 \left[\int_0^l \varphi^2(x) dx + \int_{l/3}^{2l/3} \varphi^2(x) dx + l \varphi^2\left(\frac{l}{4}\right) + l \varphi^2\left(\frac{3l}{4}\right) \right], \\ 2\Pi_{max} &= EJ \int_0^l \varphi''^2 dx. \end{aligned} \right\} \quad (6)$$

В качестве базисных форм берем собственные формы колебаний однородной балки, свободно опертой по концам

$$\psi_i(x) = \sin \frac{i\pi x}{l} \quad (i = 1, 2, \dots),$$

а в качестве минимизирующей формы – конечный ряд

$$\psi(x) = \alpha_1 \sin \frac{\pi x}{l} + \alpha_2 \sin \frac{2\pi x}{l} + \dots + \alpha_n \sin \frac{n\pi x}{l}.$$

Для первого одночленного приближения, положив

$$\psi_1 = \sin \frac{\pi x}{l},$$

Находим по формуле (6)

$$\Pi_{11} = \frac{EJ\pi^4}{l^4} \int_0^l \sin^2 \frac{\pi x}{l} dx = \frac{EJ\pi^4}{2l^3},$$

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$$T_{11} = \mu \left[\int_0^l \sin^2 \frac{\pi x}{l} dx + \int_{l/3}^{2l/3} \sin^2 \frac{\pi x}{l} dx + l \sin^2 \frac{\pi}{4} + l \sin^2 \frac{3\pi}{4} \right] = \frac{5\mu l}{3}.$$

После чего из уравнения $T_{11}p^2 - \Pi_{11} = 0$ получаем для верхней границы основной частоты

$$p_1 \leq \frac{5,38}{l^2} \sqrt{\frac{EJ}{\mu}}.$$

При вычислении второго приближения основной частоты следует взять в качестве минимизирующей формы

$$\psi(x) = \alpha_1 \sin \frac{\pi x}{l} + \alpha_3 \sin \frac{3\pi x}{l}, \quad (7)$$

так как первая форма симметрична относительно середины балки. Взяв вместо второго слагаемого в (7) $\sin \frac{2\pi x}{l}$, мы как показывают вычисления, не улучшим первое приближение. Подставив (7) в выражения для $T_{11}, T_{12}, T_{22}, \Pi_{11}, \Pi_{12}, \Pi_{22}$ получим

$$\Pi_{11} = \frac{EJ\pi^4}{2l^3}, \quad \Pi_{11} = \Pi_{21} = 0, \quad \Pi_{22} = \frac{81EJ\pi^4}{2l^3},$$
$$T_{11} = \frac{5\mu l}{3}, \quad T_{12} = T_{21} = \mu l, \quad T_{22} = \frac{5\mu l}{3}.$$

уравнение частот

$$\begin{vmatrix} \frac{EJ\pi^4}{2l^3} - \mu p^2 \frac{5l}{3} & -\mu p^2 l \\ -\mu p^2 l & \frac{81EJ\pi^4}{2l^3} - \mu p^2 \frac{5l}{3} \end{vmatrix} = 0,$$

если положить,

$$\frac{EJ\pi^4}{\mu l^4 p^2} = x,$$

будет иметь вид

$$\left(0,5x - \frac{5}{3}\right) \left(40,5x - \frac{5}{3}\right) - 1 = 0$$

или

$$x^2 - 3,374x + 0,888 = 0.$$

Отсюда

$$x_1 = 3,347; \quad x_2 = 0,027$$

и

$$p_1 = \frac{5,36}{l^2} \sqrt{\frac{EJ}{\mu}}$$

Второе приближение мало отличается от первого, и поэтому искать следующее приближения нет надобности.

Для вычисления второй частоты в выражении минимизирующей формы следует взять слагаемые с четными аргументами. Так, имея в виду первое приближение второй частоты, полагаем

$$\psi_2(x) = \sin \frac{2\pi x}{l}.$$

Тогда

$$T_{11} = 1,299\mu l; \quad \Pi_{11} = \frac{4EJ\pi^2}{l^2}$$

и из уравнения

$$T_{11}p^2 - \Pi_{11} = 0$$

находим

$$p_2 \approx 17,31 \sqrt{\frac{EJ}{\mu}}.$$

Вычислим второе приближение для p_2 найдем, что в пределах первых трех десятичных знаков оно совпадает с первым, на котором и следует закончить расчет.

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THE SYSTEM OF THEMATIC AND STATISTICAL INFORMATION PROCESSING OF PRINT AND ONLINE PUBLICATIONS

Abstract: The work is devoted to the system of thematic and statistical processing of information of printed and online publications using MongoDB DBMS. The purpose of creating such a system is to increase the efficiency of information and analytical departments of institutions. The overview of existing solutions was conducted. The creation of a thematic and statistical information processing system for print and online publications is described. A description of the subject area and a review of existing information retrieval systems of news arrays are done. The functional requirements for the system are described, the development and testing process is considered.

Key words: Internet publications, information retrieval, keywords, word statistics.

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СИСТЕМА ТЕМАТИЧЕСКОЙ И СТАТИСТИЧЕСКОЙ ОБРАБОТКИ ИНФОРМАЦИИ ПЕЧАТНЫХ И ИНТЕРНЕТ-ИЗДАНИЙ

Аннотация: Работа посвящена системе тематической и статистической обработки информации печатных и интернет-изданий с использованием СУБД MongoDB. Цель создания такой системы - повышение эффективности работы информационно-аналитических отделов учреждений. В процессе работы проводился обзор существующих решений. Описано создание системы тематической и статистической обработки информации печатных и интернет-изданий. Приведено описание предметной области, обзор существующих систем поиска информации новостных массивов. Описаны функциональные требования к системе, рассмотрен процесс разработки и тестирования.

Ключевые слова: интернет-издания, информационный поиск, ключевые слова, статистика слов.

Введение

В складывающейся мировой политической обстановке продолжает расти роль СМИ, как инструмента воздействия на массовое сознание населения. Развитие современных средств телекоммуникации и информационных технологий позволило существенно расширить возможности по представлению информационных

массивов потребителю. Значительно увеличилась интенсивность информационного потока, под которым находится большинство граждан. Сложно переоценить влияние интенсивности и содержания новостного потока на эффект воздействия на человека. В связи с этим, перед различными государственными и коммерческими информационно-аналитическими учреждениями

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возникают задачи по исследованию данного потока. Изучению подлежат содержание сообщений, их интенсивность, взаимная корреляция, характеристики изданий и авторов, полнота и достоверность информации, представляемой потребителям и т.д. Поэтому крайне важным является повышение эффективности работы информационно-аналитических отделов учреждений.

Постановка задачи и анализ предметной области

При организации и ведении информационно-аналитической деятельности (ИАД) специалистам приходится решать ряд специфических проблем, таких как:

- отсутствие актуальных данных об источниках достоверной тематической информации и предметной области;
- значительные временные и трудовые затраты, выделяемые для определения достоверности источников;
- выделение значительного временного ресурса на отбор и ввод сведений;
- представление большого количества разрозненной, зачастую недостоверной, информации по определенным тематикам;
- отсутствие возможности автоматизированного ввода;
- отсутствие специальных инструментов обработки информации, необходимых при осуществлении ИАД;
- отсутствие специализированного автоматизированного поиска по источникам информации в зависимости от тематики исследования;
- представление информационных блоков посредством различных носителей в широком многообразии форматов.

Средства сбора информации, которые имеются в распоряжении профессионального аналитика, не отличаются многообразием. Основные - сеть Интернет и публикации в различных письменных источниках. Но задача поиска, отбора, обработки данных, а также их последующего анализа является весьма сложной даже при работе с первичными данными, полученными из каналов СМИ. Важнейшей особенностью сети Интернет, как источника информации, является принцип предоставления информации по требованию [1]. Что делает ее на данный момент самым легким и быстрым источником данных. В традиционной системе автор сталкивается с экспертизой своего произведения перед его публикацией: научные издательства оценивают научную ценность и достоверность, коммерческие – актуальность и популярность темы, оригинальность формы [2] и т.д. Ложная, повторяющаяся, неактуальная информация в значительной мере отсеивается.

Однако, информация, попадающая в сеть Интернет, в большинстве случаев не проходит проверок. Актуальность и достоверность информации, получаемой из сети Интернет, является одной из проблем информационной аналитики. Одним из ее решений является использование заслуживающих доверия источников. Накопленные к настоящему времени объемы информации вместе с темпами ее роста определяют актуальность и значимость информационного поиска, в решение многих задач ИАД. Информационный поиск – совокупность логических и технических операций, имеющих конечной целью нахождение документов, сведений о них, фактов, данных, релевантных запросу потребителя [3].

Одним из видов информационного поиска является тематический поиск, который ориентирован на нахождение документов по их содержанию. Общая схема такого поиска заключается в формулировании пользователем некоторого запроса относительно содержания документа и отборе из множества доступных документов тех, которые удовлетворяют запросу. Такой вариант поиска удобен прежде всего, тем, что нет необходимости в предварительном разделении документов по различным категориям. Особенно это актуально при значительном объеме доступных документов, высокой динамике их обновления или отсутствии некоторых реквизитов. Основная проблема тематического поиска – это сложность однозначной автоматической интерпретации содержания текстов документов и формулировок информационных потребностей пользователей. Эта проблема обусловлена отсутствием какой-либо регулярной структуры у текстовых документов на естественном языке. Информационные ресурсы, содержащие такие документы, принято называть неструктурированными или слабоструктурированными. При работе с большим количеством информации, специалист сталкивается с проблемой ее обработки и хранения. Множество разнообразных форматов хранения информации затрудняет её обработку. Специалисту приходится производить различные манипуляции по поиску информации, структуризации, хранению. Одним из решений данной проблемы является создание хранилища информации, позволяющее сохранять и обрабатывать данные различных форматов. Во многих поисковых системах для уменьшения времени поиска используется полнотекстовый поиск, который является разновидностью тематического поиска.

Процесс поиска текстовой информации, реализуемый типичной поисковой системой, включает в себя следующие этапы:

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– формализация пользователем поискового запроса (представление пользователем в том или ином виде своих информационных потребностей);

– предварительный отбор документов по формальным признакам наличия интересующей информации (например, наличие в тексте документа одного из слов запроса, если запрос формулируется на естественном языке);

– анализ отобранных документов (лингвистический, статистический);

– оценка соответствия смыслового содержания найденной информации требованиям поискового запроса (ранжирование).

Всю совокупность представленных на сегодняшний день методов тематического анализа текста можно разделить на две группы:

- лингвистический анализ;
- статистический анализ.

Первый ориентирован на извлечение смысла текста по его семантической структуре, второй – по частотному распределению слов в тексте. В свою очередь, лингвистический анализ можно разделить на четыре взаимодополняющих вида анализа: лексический, морфологический, синтаксический, семантический. Статистический анализ – это, как правило, частотный анализ в тех или иных его вариациях. Суть такого анализа заключается в подсчете количества повторений слов в тексте и использовании результатов подсчета для конкретных целей, например, вычисление весовых коэффициентов ключевых слов [4].

Нами был произведен анализ существующих решений в этой области - агрегатор новостных и медийных порталов Agregator.PRO [5], информационно-аналитическая система InfoStream [6], информационно-аналитическая система ПрессИндекс [7], локальная поисковая система Архивариус 3000 [8], Интернет-библиотека русскоязычных СМИ Public.Ru [9]. Изучив существующие системы сбора, обработки и хранения информационных массивов новостных изданий, можно выделить их основные недостатки:

- большинство систем не позволяет загружать в информационное хранилище статьи в виде текстовых файлов. Такие статьи не могут быть использованы в поиске и составлении статистики наравне с загруженными с сайтов интернет-изданий;

- большинство систем не предоставляет возможность делать выгрузку результатов поиска в текстовом формате, что не позволяет использовать результаты для дальнейшей работы вне ИС;

- рассмотренные системы не позволяют предприятию самостоятельно определять используемые источники публикаций, а также частоту и время добавления статей в БД.

Поэтому построение системы тематической и статистической обработки информационного массива, предоставляемым печатными и интернет-изданиями, позволяющей пользователю получать информацию из источников, производить быстрый поиск по различным критериям и получать полную и удобную статистику, является очень актуальной задачей.

Общие требования к системе

Нами были изучены существующие модели систем тематической и статистической обработки информационного массива, предоставляемым печатными и интернет-изданиями. Были проанализированы различные функции и методы работы данных систем и выделены особенности, негативно сказывающиеся на работе и репутации систем среди пользователей подобных ресурсов. Требования, улучшающие работу системы и позволяющие создать хранилище данных, позволяющие получать корректную и актуальную информацию из информационных массивов:

- система должна хранить данные интересующих пользователя интернет-изданий;

- система должна своевременно получать данные интернет-изданий;

- система должна предоставлять возможность пользователю вручную загружать в хранилище текстовые файлы;

- система должна предоставлять возможность поиска статей по:

- источнику;
- автору;
- рубрике, с использованием синонимов;
- дате публикации,
- названию статьи;
- слову, содержащемуся в тексте статьи, с использованием его словоформ;

- система должна предоставлять возможность автоматического выделения ключевых слов и тематики из текста публикации;

- система должна предоставлять возможность автоматического статистического анализа публикаций по различным критериям и вывода полученной статистики;

- система должна предоставлять возможность выгрузки результатов поиска в текстовом формате.

Система должна включать в себя информационно связанные между собой, но разделенные по типу информационного пространства, подсистемы.

Информационное пространство системы делится на следующие подсистемы, предполагающие различный уровень доступа:

- подсистема пользовательского доступа – инструменты и разделы ИС к функциональности которых имеют доступ все пользователи ИС;

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- подсистема административного доступа - инструменты и разделы для управления содержанием и наполнением ИС, к функциональности которых имеют доступ только администраторы ИС.

Для получения пользовательского или административного доступа в подсистему, пользователь должен пройти процедуру аутентификации на уровне операционной системы.

Прикладное программное обеспечение ИС состоит из:

- подсистема «Пользовательский инструментарий»;
- подсистема администрирования и управления содержанием «Инструментарий администратора».

Подсистема «Пользовательский инструментарий» выполняет функции:

- добавления новых статей в БД системы;
- поиска и чтение, хранимых в системе статей;
- автоматического выделения ключевых слов и тематик новостных статей;
- сбора статистической информации по новостным статьям печатных и интернет-изданий.

Подсистема администрирования и управления содержанием «Инструментарий администратора» предназначена для анализа и обеспечения функционирования ИС, резервного копирования и восстановления, своевременного добавления информации в ИС.

Так как подсистемы разрабатываются в рамках одного технического контура и используют одну базу данных (БД), требования к способам и средствам связи для информационного обмена не предъявляются.

ИС должна предусматривать в себе механизм для сбора информации из сети Интернет, а также других систем в формате HTML, XML, TXT для формирования базы данных новостных статей.

Одним из инструментов, который должна предоставлять ИС - диагностирование основных процессов системы. При возникновении ошибок или аварийных ситуаций, инструменты диагностики должны сохранять информацию, необходимую разработчику для идентификации.

При разработке ИС должна предусматриваться возможность модернизации программного обеспечения. В том числе, необходимо предусмотреть возможность дальнейшего увеличения производительности системы, путем масштабирования.

После критического сбоя серверной операционной системы или СУБД, в процессе выполнения пользовательских задач, должно быть обеспечено восстановление данных в базе данных до состояния на момент окончания последней нормально завершенной перед сбоем

транзакции. Проверка целостности данных и настройка резервного копирования должна обеспечить восстановление данных на момент окончания последней нормально завершенной транзакции.

Требования к функциям, выполняемым системой

Подсистема «Пользовательский инструментарий» предназначена для:

- добавления новых статей в БД системы;
- поиска и чтение, хранимых в системе статей;
- автоматического выделения ключевых слов и тематик новостных статей;
- сбора статистической информации по новостным статьям печатных и интернет-изданий.

Доступ к ИС предоставляется только зарегистрированным в операционной системе пользователям. В рамках данной подсистемы должны быть предусмотрены инструменты, позволяющие зарегистрированным пользователям ИС просматривать, добавлять и получать статистические данные по новостным статьям, размещенных в БД.

Размещение статей должно производиться пользователями при помощи электронной формы, содержащей следующие поля:

- название источника;
- рубрика;
- название статьи;
- текст статьи (прикрепляется файл формата TXT);
- автор(ы) статьи;
- дата публикации.

Каждая статья, загруженная в базу данных ИС, должна содержать набор атрибутов:

1. Источник:
 - для статьи, загруженной из интернет-издания, источник должен быть определен автоматически, исходя из названия статьи на странице новостного сайта;
 - для статьи, загруженной пользователем, название источника заполняется пользователем, либо помечается значением «undefined».

2. Рубрика (тэг):
 - для статьи, загруженной из интернет-издания, рубрика должна определяться автоматически, исходя из названия рубрики, в которой опубликована статья на сайте интернет-издания;
 - для статьи, загруженной пользователем, название рубрики заполняется пользователем, либо определяется системой автоматически исходя из содержания публикации.

3. Название статьи:
 - для статьи, загруженной из интернет-издания, название должно определяться

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автоматически, исходя из названия статьи на сайте интернет-издания;

- для статьи, загруженной пользователем, название заполняется пользователем, либо помечается меткой «undefined».

4. Текст статьи:

- для статьи из интернет-издания текст загружается автоматически;

- для статьи, загруженной пользователем, текст загружается пользователем из файла с форматом TXT.

5. Автор(ы) статьи:

- для статьи, загруженной из интернет-издания, имя и фамилия автора(ов) загружаются автоматически. При их отсутствии ставится метка «undefined»;

- для статьи, загруженной пользователем, имя и фамилия автора(ов) заполняется пользователем, либо помечается меткой «undefined».

6. Дата публикации:

- для статьи, загруженной из интернет-издания, дата публикации должна определяться автоматически, исходя из даты публикации статьи на сайте интернет-издания.

- для статьи, загруженной пользователем, дата публикации заполняется пользователем, либо заполняется автоматически текущей датой.

7. Статистика слов:

- заполняется автоматически, при загрузке статьи в БД.

8. Статистика имен собственных:

- заполняется автоматически, при загрузке статьи в БД.

9. Ключевые слова:

- заполняется автоматически, при загрузке статьи в БД.

10. Дата загрузки статьи в БД:

- заполняется автоматически, при загрузке статьи в БД.

В подсистеме должны быть реализованы следующие функции:

1. Сортировка. Позволит сортировать документы по названию, дате, тематике и т.д.

2. Поиск статей, размещенных в базе данных, по:

- источнику;

- дате;

- автору (авторам);

- словам, поиск которых должен производиться в тексте статьи, при этом результаты поиска должны выводиться по порядку релевантности статьи относительно искомого слова.

3. Вывод статистики встречаемости слова по критериям:

- источник;

- период времени публикации статьи;

4. Поиск по словам должен включать в себя:

- поиск по словосочетанию;

- поиск по слову с использованием различных словоформ одного слова и с удалением коротких и стоп-слов, включающих в себя:

- знаки препинания;

- отдельно стоящие буквы алфавита;

- союзы, междометия, причастия, предлоги, местоимения.

Подсистема «Инструментарий администратора» предназначена для обеспечения поддержки ИС, резервного копирования и восстановления, своевременного добавления информации в ИС, анализа использования.

Подсистема должна обеспечивать возможность:

- добавления шаблонов для автоматической загрузки с сайтов интернет-изданий, настройка которых еще не произведена;

- изменение шаблонов для автоматической загрузки с сайтов интернет-изданий, уже входящих в список используемых;

- удаление шаблонов для автоматической загрузки с сайтов интернет-изданий, информация которых больше не используется.

Состав, структура и способы организации данных в системе должны быть определены на этапе технического проектирования.

Уровень хранения данных в системе должен быть построен на основе современных СУБД.

Доступ к данным должен быть предоставлен только авторизованным пользователям с учетом их служебных полномочий, а также с учетом категории запрашиваемой информации.

Технические средства, обеспечивающие хранение информации, должны располагаться на территории предприятия и использовать современные технологии, позволяющие обеспечить повышенную надежность хранения данных и оперативную замену оборудования.

В состав системы должна входить специализированная подсистема резервного копирования и восстановления данных. Данные должны быть защищены от разрушений при авариях и сбоях в электропитании системы путем создания резервных копий.

Построение решения задачи

Система тематической и статистической обработки информации печатных и интернет-изданий обладает наиболее востребованными функциональными свойствами и позволяет решать ежедневные задачи по мониторингу и поиску публикаций при ведении ИАД. Модель информационной системы состоит из следующих модулей:

- информационное хранилище;

- автоматический алгоритм получения публикаций из сети Интернет;

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- автоматический алгоритм тематической обработки публикаций;
- автоматический алгоритм статистической обработки публикаций;
- модуль автоматизированного поиска публикаций;
- веб-интерфейс.

Каждая составляющая модели выполняет особые функции и имеет структуру, позволяющую реализовывать алгоритмы для решения поставленных задач.

Построение решения задачи: информационное хранилище

Основной функцией информационного хранилища является хранение текста публикации с сопутствующими атрибутами. Информационное хранилище должно обеспечивать высокую отказоустойчивость и масштабируемость. При этом оно должно быстро осуществлять операции чтения-записи и обладать возможностью полнотекстового поиска. Лучше всего для этого подходит NoSQL документно-ориентированное СУБД.

Разработанная модель содержит единственную коллекцию Articles, которая хранит тексты публикаций с атрибутами:

- sourceArticle - источник статьи;
- tagArticle - рубрика, к которой относится статья;
- headlineArticle - заголовок статьи;
- textArticle - текст статьи;
- dateArticle - дата публикации;
- authorArticle - подколлекция, содержащая автора или авторов статьи;
- statisticsUseSynonyms - подколлекция, представляющая собой статистику для поиска с синонимами и содержащая поля word – слово и occurrence – частота вхождения слова в текст;
- statisticsProperName - подколлекция, представляющая собой статистику для поиска имен собственных и содержащая поля word - слово и occurrence - частота вхождения слова в текст;
- keyWordCollection - подколлекция, содержащая ключевые слова, автоматически выделенные из текста публикации.

При загрузке публикации из сети Интернет, все поля проверяется на корректность типа данных и заполняются автоматически, при отсутствии какого-либо поля оно помечается значением “undefined”, что позволяет в дальнейшем проследить либо наличие некорректных данных, либо полное отсутствие этих данных в источнике.

При ручной загрузке публикаций, пользователем заполняются поля:

- источник статьи;
- рубрика;

- заголовок;
- текст статьи;
- дата публикации;
- автор(ы) статьи.

При этом поля «Источник статьи», «Заголовок» и «Текст статьи» являются обязательными для заполнения.

Поле «Автор(ы) статьи» может содержать коллекцию авторов одной статьи.

При появлении нового документа на запись в БД поля «Статистика для поиска с синонимами», «Статистика для поиска имен собственных» и «Коллекция ключевых слов» заполняются системой автоматически. Первые два поля организованы в виде словарей, где ключами являются все слова текста, а значениями - встречаемость слов в тексте. Данные поля служат для получения статистики.

Построение решения задачи: автоматический алгоритм получения публикаций из сети Интернет

Информационная система тематической и статистической обработки новостных массивов позволяет в автоматическом режиме получать данные с сайтов новостных изданий.

Структура сетевого новостного текста содержит следующие элементы:

1) Рубрика - результат максимального сжатия содержания текста, отражающий его главный предмет.

2) Тема - обобщённое содержание текста. Тема указывается автором в заголовочной части новостного текста и первом предложении статьи.

3) Подтемы - компоненты содержания текста, направленные на детализацию описываемой в тексте ситуации, раскрытие аспектов основной темы новостного текста.

Комплекс, образованный заголовком и подзаголовком статьи, входит в перечень опубликованных новостных сообщений в определенной рубрике и представляет собой анонс содержания текста. Его цель – кратко представить информацию, передаваемую текстом. Комплекс является гиперссылкой, при переходе по которой на следующий уровень сайта, происходит отображение основного текста статьи.

Заголовок, расположенный вместе с основным новостным текстом, может совпадать или отличаться от заголовка-гиперссылки. Его особенность в качественных интернет-изданиях заключается в краткости (не более 10 слов) и точной передаче текстового содержания, поэтому он лишен экспрессивной окраски [10]. Заголовок новостной статьи используется для загрузки в поле «Заголовок» БД.

Дата публикации статьи, как правило, ставится автоматически при добавлении на сайт интернет-издания и публикуется вместе с текстом

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JIF = 1.500

SIS (USA) = 0.912
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ESJI (KZ) = 8.716
SJIF (Morocco) = 5.667

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и заголовком статьи. Однако, недобросовестные интернет-издания, вместо даты публикации статьи могут выводить дату последнего изменения для увеличения посещаемости сайта [11]. Качественные интернет-издания обычно имеют в своей HTML-разметке и дату публикации, и дату последнего изменения.

Исходными данными для модуля автоматического получения публикаций из сети интернет, является массив URL рубрик источника публикаций. После этого производится разбор HTML-страницы на наличие ссылок на отдельные публикации. В итоге система получает HTML-страницы новостных статей, при обработке которых получают поля. Данные поля в дальнейшем обрабатываются и записываются в БД.

Структуры веб-источников различаются, однако можно выделить схожие черты, которые позволяют использовать одинаковый функционал для получения URL отдельной публикации. Для каждой статьи ИС получает HTML-код, из которого выделяются необходимые для загрузки в БД поля. Структура HTML-кода статей для одного источника однородна, поэтому для получения данных, достаточно выбрать содержащие их контейнеры и в дальнейшем использовать для всего сайта. При этом контейнер должен включать хотя бы один атрибут со значением, однозначно его определяющим и выделяющим среди множества других тэгов.

Построение решения задачи: автоматический алгоритм тематической обработки текста публикаций

Система тематической и статистической обработки информации новостных массивов позволяет в автоматическом режиме обрабатывать текст статьи, выделяя ключевые слова и тематику статьи. Ключевые слова в контексте анализа текста представляют собой важные, общепонятные, ёмкие слова, набор которых дает полное описание текста для читателя. Другими словами, ключевые слова - это такой набор слов, который позволяет на своей основе восстановить смысл текста. Множество ключевых слов представляет собой свертку текста, поэтому поиск по ключевым словам эффективнее, чем поиск по любому слову из текста, потому что поиск в данном случае производится именно по семантической нагрузке.

Рубрикация текста необходима для его систематизации. Она позволяет выделить главный предмет и в дальнейшем использовать его для поиска публикаций одинаковой направленности.

Автоматическое выделение рубрики статьи необходимо в том случае, когда пользователь при ручном занесении публикации в хранилище не указывает рубрику, к которой относится статья.

Задача поиска ключевых слов текста схожа с задачей выделения тематики, поэтому для решения обеих задач используют одинаковые методы. Одними из самых эффективных методов решения задачи являются алгоритмы кластеризации [12]. В текущей версии системы задача автоматического выделения рубрики статьи ещё не решена до конца, ведутся исследования, в настоящее время планируется применение самоорганизующихся карт Кохонена (SOM). К тому же последние работы показывают (см., например, [13]), что на больших массивах данных методы машинного обучения дают неплохие результаты по обработке текстов на русском языке.

Модуль автоматической обработки текста публикаций принимает на вход текст статьи, после чего из него удаляются лишние пробелы, знаки табуляции, знаки перевода строки. После обработки текст готов к внесению в БД.

Для автоматического заполнения полей «Статистика для поиска с синонимами» и «Статистика для поиска имен собственных» необходимо разбить обработанный текст на слова. Разделителями являются знак пробела, перевода строки и всевозможные знаки пунктуации. После разбиения текста на слова производится подсчет частоты вхождения слова в тексте. При этом слова из коллекции поля «Статистика для поиска с синонимами» приводятся к одному регистру. Это необходимо сделать из-за того, что для кодирования заглавных и строчных символов используются разные ASCII-коды, и система в дальнейшем может воспринять одно слово в разных регистрах, как два разных.

Число, показывающее сколько раз встречается слово в тексте, называется частотой вхождения слова. Если расположить частоты по мере убывания и пронумеровать, то порядковый номер частоты называется рангом частоты. Вероятность обнаружения слова в тексте равно отношению частоты вхождения слова к числу слов в тексте. Джордж Ципф (G.K. Zipf) популяризовал эмпирическую закономерность, которая стала носить название закона Ципфа, заключающуюся в том, что если взять достаточно длинный текст на естественном языке, то частота слова с n -ным рангом окажется приблизительно обратно пропорциональной n . Иными словами, если умножить вероятность обнаружения слова в тексте на ранг частоты, то получившаяся величина приблизительно постоянна для всех текстов на одном языке [14]: $f \cdot r/n = const$, где f – частота вхождения слов, r – ранг частоты, n – число слов в тексте. Если нарисовать график зависимости ранга слова от его частоты вхождения, то, как показали исследования вышеуказанных зависимостей для различных текстов, наиболее значимые слова текста лежат в средней части графика, так как

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слова с максимальной частотой, как правило, являются предложениями, частицами, местоимениями (так называемые «стоп-слова»), а редко встречающиеся слова в большинстве случаев не имеют решающего значения. Таким образом, данная особенность может помочь правильно выбрать ключевые слова из текста. Процедура оптимального выбора ключевых слов, основанная на алгоритмах кластеризации и законе Ципфа, заключается в следующем:

1. «Стоп-слова» удаляются из текста;
2. Выделяются предварительные ключевые слова на основе методов кластеризации;
3. Вычисляется частота вхождения каждого предварительного ключевого слова и составляется список, в котором слова расположены в порядке убывания их частоты;
4. Выбирается диапазон частот, лежащий в середине списка. Слова, соответствующие данным частотам с наибольшей вероятностью являются ключевыми.

Ключевые слова сохраняются в поле «Коллекция ключевых слов» БД.

Рубрика анализируемого текста выбирается с помощью коллекции ключевых слов, имеющихся в БД названий рубрик и подключаемой внешней БД синонимов.

Построение решения задачи: автоматический алгоритм статистической обработки публикаций

С помощью полей «Статистика для поиска с синонимами» и «Статистика для поиска имен собственных» производится подсчет частоты употребления слова в статьях с использованием различных критериев. В набор критериев входят:

- промежуток даты публикации статьи;
- источник статьи;
- автор(ы) статьи.

Основной проблемой при подсчете частоты употребления слова является принадлежность его к именам собственным. Для ее решения необходимо выделить имена собственные, встречающиеся в тексте на этапе обработки. Критерии определения имен собственных [15]:

- имена собственные в кавычках пишутся с заглавной буквы (хотя бы первое слово: медаль «За отвагу на пожаре») и не имеют перед знаком кавычек двоеточия, а после знака кавычек - тире;
- имена собственные, не оформленные кавычками, в середине предложения пишутся с большой буквы;
- имена собственные могут иметь при себе инициалы с точкой;
- имена собственные могут быть написаны в виде одной заглавной буквы с точкой (инициалы), а после слово с заглавной буквы (фамилия);
- инициалы часто стоят после фамилии, поэтому при обнаружении в тексте заглавных букв

с последующими точками следует обратить внимание на то, с какой буквы пишется предыдущее слово. Если оно тоже с заглавной, а перед ним нет точки, то это фамилия. Если предыдущее слово со строчной буквы – проверить последующее слово.

Построение решения задачи: модуль автоматизированного поиска публикаций

Система тематической и статистической обработки новостных массивов позволяет в автоматическом режиме производить поиск текста статьи по заданным критериям в БД. Для поиска текстовых данных в БД существуют различные инструменты:

- регулярные выражения;
- встроены операторы поиска (например, оператор LIKE в некоторых СУБД) и т.д.

Для разрабатываемой ИС наиболее эффективным инструментом поиска текста является полнотекстовый поиск. Полнотекстовый поиск - это автоматизированный поиск документов, при котором отбор ведётся не по именам документов, а по их содержанию, всему или существенной части [16].

Все технологии полнотекстового поиска работают по схожему принципу. На основе текстовых данных строится индекс, который способен быстро искать соответствия по ключевым словам. Обычно, сервис поиска состоит из двух компонент - индексатора и поисковика. Индексатор получает текст на вход, делает обработку текста (получение нормальной формы слова (леммы), удаление стоп-слов и т.п.) и сохраняет все в индексе. Устройство такого индекса позволяет быстро проводить поиск по нему. Поисковик - интерфейс поиска по индексу - принимает от клиента запрос, обрабатывает слово или словосочетание и ищет его в индексе [17]. Для организации поиска в информационном хранилище системы тематической и статистической обработки новостных массивов используются следующие виды поиска:

- полнотекстовый поиск для поля textArticle;
- поиск по полному соответствию для поля sourceArticle;
- поиск с использованием регулярных выражений для поля authorArticle;
- поиск по промежутку для поля dateArticle.

Реализация системы

Проанализировав сформулированные требования и отобрав необходимые для реализации модулей системы алгоритмы, были выбраны следующие программные продукты:

- СУБД MongoDB 3.4;
- ASP.NET MVC 4.0 Framework. Язык программирования - C#;
- MongoDB .NET 2.2 Driver;

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- SDK PullEnti.

Для работы с информационным хранилищем системы была выбрана NoSQL документо-ориентированная СУБД MongoDB 3.4. Выбор данного продукта обусловлен следующими причинами:

- СУБД MongoDB является свободно распространяемым продуктом;

- данная СУБД является документо-ориентированной (для нашей системы реляционная СУБД является избыточной) и поддерживает создание текстовых индексов;

- на основе текстовых индексов можно производить полнотекстовый поиск, поддерживающий морфологию русского языка;

- для хранения данных используются формат BSON, который позволяет быстро производить поиск и обработку данных;

- способность к горизонтальному масштабированию.

MongoDB .NET 2.2 Driver является официальным драйвером MongoDB для взаимодействия с платформой .NET. Основными достоинствами продукта являются:

- MongoDB .NET 2.2 Driver предоставляет возможность асинхронного взаимодействия с MongoDB;

- поддержка BSON сериализации;

- возможность построения запросов любых уровней сложности, включая запросы с использованием текстовых индексов. Использование для запросов нотации LINQ;

- возможность обращаться к объектам БД не только как к BSON-документам, но и как к объектам классов, определенных в C#;

- возможность внесения изменений в схему БД, а также добавление новых полей или подколлекций в документы.

Подключение к БД начинается с запуска сервера БД, после этого, с помощью конструктора по умолчанию ArticleContext, приложение создает экземпляр клиента подключения с указанием строки подключения. При создании коллекции Articles БД для поля textArticle был создан текстовый индекс, который позволяет производить полнотекстовый поиск.

Для получения информации со страниц новостных сайтов используется библиотека C# HtmlAgilityPack [18]. Библиотека использует для разбора HTML-страниц XPath - язык запросов к элементам XML документа. Разбор HTML-страниц начинается с вызова метода GetListArticle класса, определённого для каждого новостного сайта. Класс содержит в себе шаблоны для разбора страниц, а также URL новостного сайта. Метод GetListArticle вызывает метод GetURL класса ToolParsing, который возвращает весь HTML-код разбираемой страницы. Далее начинается проход по всем узлам документа, для

поиска ссылок для перехода на страницы статей. Узлом в данном случае является любой тэг HTML-кода, причем библиотека HtmlAgilityPack при поиске узла позволяет учитывать вложенность узла в другой узел и т.д. При проходе по всем узлам учитывается значение атрибута искомого тега. При нахождении необходимого тега происходит считывание значения URL страницы статьи.

Для получения информации из HTML-кода страницы новостной статьи используется метод GetComponent класса ToolParsing. Метод использует вызов вспомогательных методов GetString, GetData и GetCollection того же класса для получения необходимых полей, а также метод CountOccurence класса StatisticsTool для сбора статистики текста. По окончании работы модуля происходит сохранение статей с сопутствующими полями в БД с помощью асинхронного метода InsertDocsInArticlesCollection класса ArticleContext.

Для получения ключевых слов статьи используется SDK PullEnti [19]. Встроенные инструменты SDK PullEnti позволяют получать именованные группы из текста - имена существительные или имена существительные с относящимися к ним прилагательными. SDK выделяет среди именных групп ключевые слова и подсчитывает их ранг - число, показывающее значимость слова относительно текста. Так, например, название географических объектов имеют наибольший ранг. Ранг определяется при семантическом анализе на основе выделения в тексте объектов и их взаимоотношений. Выявленные ключевые слова помещаются в поле keyWordCollection БД. Как уже отмечалось, в настоящее время проводится реализация алгоритма автоматического выделения из текста рубрики статьи. Первичная обработка текста для получения статистики происходит еще на этапе загрузки данных в БД. Затем, при введении пользователем необходимых критериев статистики, происходит поиск слова в полях statisticsUseSynonyms и statisticsProperName. Вывод статистики происходит с помощью метода CreateChart контроллера HomeController. Метод принимает на вход коллекции значений, по которым строится график.

СУБД MongoDB и разработанный для взаимодействия с ней MongoDB .NET 2.2 Driver позволяют производить поиск данных в БД. Асинхронный метод FindArticles контроллера HomeController принимает на вход коллекцию введенных пользователем фильтров, после этого происходит поиск по фильтрам в БД.

Тестирование системы

Тестирование разработанной системы проводилось на 1614 публикациях, загруженных

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из интернет-изданий «Комсомольская правда» [20] и «Lenta.ru» [21]. Статистика коллекции Articles изображена на Рис. 1.

```
> db.articles.stats()
{
  "ns" : "articledb.articles",
  "count" : 1614,
  "size" : 37255130,
  "avgObjSize" : 23082,
  "storageSize" : 16703488,
  "capped" : false,
  "wiredTiger" : {
    "metadata" : {
      "formatVersion" : 1
    }
  }
}
```

Рис.1 Статистика коллекции Articles

1) Было проведено выделение из текста публикаций ключевых слов. Пример результата работы алгоритма выделения ключевых слов из текста приведен на Рис. 2.

Найден гигантский гусь ростом 1,5 метра [22]. Палеонтологи, ведомые Марко Павиа (Marco Pavia) из Университета Турина (University of Turin), исследовали кости, обнаруженные в центральной Италии. И пришли к выводу, что они принадлежали огромному гусю, который водился тут 5-9 миллионов лет назад. Его назвали Garganornis ballmanni. Кости доисторического гуся, которые позволили восстановить его облик. Как полагают ученые, обнаруженный гусь был самым крупным в семействе утиных - крупнее всех других доисторических гусей, уток и даже лебедей. Рост этого Garganornis ballmanni достигал полутора метров. Почти, как у страуса. Вес - 22 килограмма. Жаль, что гусь вымер, а то запекали бы с яблоками. Ведь в те времена, когда он жил, запекать было еще некому. Крупнее, чем этот гусей на Земле не было. Огромный гусь не летал. Крылья имел маленькие, хотя и сильные. Вес нынешних гусей не превышает 7 килограммов, рост - полуметра.	6,12: ГУСЬ 3,97: Павиа М. 3,41: ДОИСТОРИЧЕСКИЙ ГУСЬ [ГУСЬ ДОИСТОРИЗМ] 3,15: ОГРОМНЫЙ ГУСЬ [ГУСЬ ОГРОМНОСТЬ] 2,96: Университет Турина 2,94: University Of Turin 2,86: Италия [IT]
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Рис.2. Пример результата работы алгоритма выделения ключевых слов из текста

2) Был проведен статистический анализ встречаемости слов по определенным критериям.

3) Был проведен поиск публикаций в БД по различным критериям. Пример поиска приведен на Рис. 3.

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Список статей

Поиск по слову Поиск по автору Поиск по источнику Поиск по дате

Рубрика	Название	Дата	Текст	Автор(ы)
Политика	Украина хвастается переделками старых советских ракет	31.12.2016 19:33:00	Читать	Виктор БАРАНЕЦ
Общество	Александр Проханов: "Среди нас по-прежнему живут советские люди. Они и спасают Россию"	01.01.2017 10:55:00	Читать	Александр ГАМОВ
Общество	2016-й год в объективе «Комсомолки»	26.12.2016 22:00:00	Читать	undefined
Общество	Сначала Дед Мороз покорил космос, а затем отправился строить БАМ	30.12.2016 13:07:00	Читать	Надежда ФАТКУЛЛИНА
Политика	Саммиты соболезнований	26.12.2016 15:00:00	Читать	Дмитрий СМИРНОВ
Общество	Завод может быть прекрасен	26.12.2016 22:00:00	Читать	Марина АНИКЕЕВА

Рис.3. Пример поиска публикаций в БД по различным критериям

Результаты тестирования были признаны хорошими.

Заключение

В ходе разработки системы были произведен анализ существующих реализаций систем тематической и статистической обработки информации печатных и интернет-изданий, соответствующих проблем автоматического получения информации с новостных сайтов, выделения ключевых слов и тематики из текста, полнотекстового поиска. Разработанная система призвана повысить эффективность работы информационно-аналитических отделов государственных и коммерческих учреждений. Были разработаны и реализованы модули

автоматического получения публикаций из сети Интернет, тематической и статистической обработки текста публикаций, автоматизированного поиска публикаций. Для представления полученных результатов был разработан веб-интерфейс. Разработанная система была протестирована на публикациях интернет-изданий «Комсомольская правда» и «Lenta.ru». Были получены корректные данные с сайтов газет, произведено выделение ключевых слов из текстов статей, выбрана текстовая статистика, а также выполнен поиск по различным критериям. Таким образом, применение разработанной системы можно считать оправданным.

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TRENDS AND DEVELOPMENT OF THE NEW NATIONAL INTERBANK PAYMENT SYSTEM "HUMO" IN THE REPUBLIC OF UZBEKISTAN

Abstract: The Essence of contactless payments is, first of all, convenience. All our terminals and cards are equipped with NFC-modules. This means that the consumer can make purchases with just a touch of the card to terminal. We do not want people to pass their cards to the cashiers and voice their PIN codes. After all, in fact, the sound of at least one digit of the credit card number – this is access to personal information. To do this, all our stationary terminals are equipped with a Pin-pad keyboard, where you can enter the PIN code yourself.

Key words: Banks, payment system, HUMO, NFC, organization of payments, terminal, engineers infrastructure.

Language: English

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Classifiers: Payment system.

Introduction.

Telecommunication networks are the major element of an infrastructure in banks and its use stimulates its further development. Application of electronic payments, including plastic cards for the organization of clearing settlements with application of information-communication technologies it is effective in bank sphere for reduction of monetary weight that is especially very actual during the post crisis period.

To make electronic payments and plastic cards as one of progressive forms of electronic payments, and conducting calculations is an essential problem.

At the same time questions of the organization of electronic payments, release of plastic cards, its bank service, their control and safety, reliability and anonymity are not investigated adequately. There is a serious problem use of information-communication technologies and cryptography for safety of financial transactions [1,2].

In work specificity of electronic payments and payment by plastic cards, the account and control of payments in bank, with use of software and information-communication technologies that is especially important during the post crisis period of world financial and economic crisis will be investigated.

The problem of an optimum branching of payment system with use processing of centers or banks is not investigated adequately.

The processing center of bank's being the technological kernel of payment system functions in enough severe constraints, processing in real time an intensive stream of transactions.

But use of the settlement card leads to necessity of on-line- authorization of each transaction for any point of service of payment system.

For today are not investigated not only computing possibilities процессингового the center, but also preparation of the data for carrying out

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reciprocal cash following the results of day as to processing reports considerably are subject to a part of transactions, and demanded terms of performance of calculations are insignificant - some hours [3,4].

Questions of maintenance of reliable, steady functioning of payment system where calculation of necessary computing capacities in процессинговом the center is required, first, and, secondly, calculation of an optimum communication infrastructure as processing system center should have possibility simultaneously to serve enough great number of geographically remote points are not investigated. But for today also routing of inquiries is not investigated, and it toughens requirements to communications.

For an exchange of information participants of payment system, exchange with a clearing bank (and, probably, and with each other at regular carrying out взаиморасчетов) electronic documents, but calculation of an effective utilization of networks of data transmission is necessary for the effective decision of the stated problems [5-7].

Discussion.

Till now questions of an effective utilization bank - ekvaider, and electronic verification of transactions are not solved. Banks forms transactions and carry out calculations with a point of service with manual processing and verification given - check of the received checks.

Till now questions of rational distribution and redistribution of terminals on trading and service points are not considered. It is necessary to investigate turns of shops, density of population or frequency of the reference of clients, possibility of dislocation. Possibilities of use of a corporate network on the basis of Central Bank of the Republic of Uzbekistan's network are not considered [8,9,10].

By the resolution of the President of the Republic of Uzbekistan "On measures for the development of the national payment system" dated on September 19, 2018, it was decided to create a national interbank processing center. In contrast to the current system, the new system, which was called HUMO, provides for the participation of commercial banks in the organization of payments [11].

In the new system, commercial banks will be able to work more actively with customers, offering them loyalty programs, bonuses, overdraft loans and other modern products. Thus, competition between banks will increase.

New Bank cards HUMO have advantages, the first of which is duality — work in two modes: contact (the usual way when the card is entered into the terminal, the code is typed, the check comes out and the other) and contactless NFC (to use a contactless card, it is enough to bring it closer to the terminal, it takes a several seconds to pay) and it is the safety of all customer data and the possibility of conducting

pin-free transactions, that is, with minor purchases to a certain set amount, the pin card is not requested.

Also among the advantages are NFC modules on turnstiles in the Tashkent metro for payment by contactless NFC cards HUMO, and this superiority over other competitors who lead the development.

Currently, on the created engineering infrastructure for the payment system HUMO, 350,000 thousand Bank cards have already been issued, 100,000 thousand POS-terminals and 100 pcs, ATMs have been installed.

In addition, the system will be integrated with international payment systems (MasterCard, Visa, China Union Pay and others).

Integration of existing participants of the e-Commerce market and billing payments of the country with the interfaces of payments with cards issued by banks by processing participants.

Also, the implementation of payment instruments without cards.

On May 13, 2019, the National interbank processing center (NIPC) and the international payment system MasterCard signed the Memorandum on the acceptance of HUMO International cards in the MasterCard network and cooperation on the introduction of non-cash payment for travel in public transport.

The main purpose of the (NIPC) is to ensure the continuity of payments, promote innovative products, and increase the availability of banking services and the development of a competitive environment in the payment services market [11].

The payment system HUMO is designed:

- to improve the payment infrastructure;
- integrate with international systems;
- create a single payment space;
- create a national payment switch.

During 2019, it is planned to ensure the full functioning of this payment system.

The launch of the National interbank processing center (NIPC), which facilitates information and technological interaction between banks-participants of settlements on local and international Bank cards will be carried out in two stages:

- the first stage is the integration of existing national card payment systems and mobile payment systems to ensure mutual and continuous card service. Integration of the payment gateway of the (NIPC), with billing systems of service providers to implement additional functionality for the development of e-Commerce (including the mechanism of payment through e-wallets);

- the second stage is the organization of work with international payment systems directly through the single gateway of the (NIPC), which will allow commercial banks of the Republic to connect to international payment systems and reduce additional Commission costs for domestic payments by international Bank cards.

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And another advantage of cards is HUMO International card will be of interest to people who often travel abroad, do not want to do the conversion and are willing to pay for the service.

HUMO cards will work wherever MasterCard works. The card can be used both within the country and abroad.

The card can be used both within the country (payment will be made in the national currency of the Republic of Uzbekistan, in Uzbek Sum) and outside the country, then the payment will be made in the currency of the country in which the cardholder is located. The new product will also enable users to make purchases online.

Under the agreement, MasterCard intends to open access to a number of its services for HUMO International cardholders. In addition, the company is ready to transfer the anti-fraud system.

Another important point of discussion was the issue of cooperation between our country and MasterCard for the early implementation of a set of joint measures for the withdrawal of national payment cards HUMO for international payments.

The first: Differences of payment system HUMO from UzCard It is absolutely different systems and the approach.

HUMO, in our opinion, it is aimed at that clients initially received the advanced, innovative and convenient - contactless payments, an infrastructure, allowing accepting cards of the international systems.

The second: an openness principle. We declare that in our system any devices can work. The only stipulation is the presence of all certificates of safety under the international standards [11].

And the third is the refusal of rigid centralization is attempted to lift a role of participants of payment system that is banks in sphere.

They for us the basic customers of services and products.

One more sounded purpose - decentralization. Always there is a risk of that any of payment systems can work with problems or not work at all.

The unique guaranteed way to reduce probability of such faults in system - to decentralize payment system.

We want within two years all operations on service of transactions to transfer to banks. That is if at the initial stage terminals and cards are connected to National bank процессинговому to the center within two years we want to translate them under complete control of banks [11].

Then there will be no uniform point of refusal and even if at any of banks there will be technical problems, it will not affect at all other system, and even in this case there will be a possibility to come to the bank and to remove the necessary sum from a card.

The decentralization purpose is not to allow to anybody to monopolize the market and on the contrary to give the chance to banks to become independent. And it leads to an internal competition. And each bank becomes mini processing which serves HUMO. He defines, what terminals at it will be, what cards, what products: credit, overdraft. All of us have registered it in a road map.

Conclusion.

HUMO will be engaged in only interbank clearing is when the card of one bank is served in the terminal of other bank.

We will provide interaction of banks. Also it is provided, that all inner country transactions on the international payment systems remained in the country.

And we could agree about it with the international payment systems. It is necessary from the point of view of maintenance of national information security, and it will allow to reduce the price of operations on processing of card payments for banks, and finally and for shops.

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RELATED REFORMATIONS IN THE DEVELOPMENT OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP IN THE REPUBLIC OF UZBEKISTAN

Abstract: In this article has been analyzed related reformations in the development of small business and private entrepreneurship in the Republic of Uzbekistan by the helping literatures and sources.

Key words: reformation, Uzbekistan, development, private entrepreneurship, economy, finance.

Language: English

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Classifiers: Jurisprudence.

Introduction.

Nowadays, the development of legal mechanisms for the support of small businesses and the population through the provision of microfinance services and legal regulation of these activities is urgent. This type of financial services is more accessible to the user and consistent with the continual improvement of the legal procedures.

Development of small business and private entrepreneurship in Uzbekistan is considered one of the most important and strategic directions of the economy. Therefore, in line with the Decree of the President of the Republic of Uzbekistan dated February 7, 2017 PD-4947, "Strategy of Action in the Five Priorities of Development of the Republic of Uzbekistan in 2017-2021" provides for the balanced and sustained national economy which includes increasing industry, service sector, small business and the share of private entrepreneurship.

Research methods.

According to the President of the Republic of Uzbekistan Sh. M Mirziyoev, a sound and stable banking and financial system is of great importance in the development of the economy. We cannot get rid of

the "hidden economy" without increasing the confidence of the population [1, p.6].

Indeed, the improvement of the microfinance sector, which is the financial support mechanism of the banking and financial system, particularly the small business and private entrepreneurship, provides a large part of the current socio-economic development of the country.

For this purpose, the Decree of the President of the Republic of Uzbekistan on September 12, 2017 "On Additional Measures to Support the Low-supplied Population", Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 857 on October 20, 2017 "the procedure for granting microcredits by commercial banks to provide employment the Low-supplied families", and the micro crediting system is provided with convenience for users of these services improved.

It should be noted that microfinance services are a kind of activity carried out by microcredit organizations, with small amounts of loans and lending to small businesses at low interest rates. Today microcredit organizations have a specific system in Uzbekistan. According to the Central Bank of the Republic of Uzbekistan, currently there are 26

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microcredit organizations and 42 pawnshops in our country [2].

Of course, this generally represents a more positive picture. However, microcredit organizations and pawnshops show significant differences in the regions. For example, today only one microcredit organization and 3 pawnshops operate [3] in Andizhan region.

At the same time, it is one of the topical issues on forming the legal basis of microcredit organizations, developing special legal acts related to their activities, further development of nonbank microcredit organizations and identifying legal basis for pawnshops activities.

As a proof of our opinion, commercial banks also adopted laws on the provision of microfinance services. This is a great impetus for further development of entrepreneurship in our country.

In this regard, in the context of the title given in the year 2018 "Promoting entrepreneurship, innovative ideas and technologies" by the President of our country, the following points have been expressed in the context of the work that will be of benefit for several people. According to it, as an active entrepreneur, we understand entrepreneurs who are able to produce competitive products and, most importantly, create new jobs and not only provide themselves and their families, but also the whole society. It is our first priority to expand such business classes, to create the best conditions for introducing advanced technology and science-based equipment and equipment and bringing them to our country. And, if necessary, our businessmen should have the opportunity to gain experience in the leading companies and organizations of foreign countries, and provide them with all possible opportunities"[4, p.32]. In this regard significant reforms have been made by the President of our country. As an example, on June 7, 2018, the President of the Republic of Uzbekistan adopt a resolution PR3777 "Every family - Entrepreneur". The purpose of the resolution is to improve the material conditions of the population, especially in remote and climatic and far regions of the country, to ensure a significant positive change in the quality and level of life, and permitted to commercial banks to give credits. The procedure for granting loans was issued by the heads of the sector, with a reference of makhallas, with microcredits (LS up to 150-1000 times up to 7%, with a grace period of up to 6 months and no more than three years).

I would like to say that today the reforms in the country, including small business and private entrepreneurship, are under great importance. In this regard, the head of our state repeatedly says in his speech that "freedom of entrepreneurship and ensuring the protection of private property will continue to be a priority in state policy. I want to emphasize once more that it should be considered as a

betrayal for the state policy to block the way of the entrepreneur"[5, p.37].

In the process of organizing joint-stock commercial "Microcreditbank"s, it is necessary to comply with the following requirements: 1) the requirements imposed by the Central Bank on executives; 2) requirements for the management bodies of the bank and its organizational structure; 3) requirements for the name of the bank; 4) requirements for the Regulations on domestic credit policy; 5) software requirements for banks; 6) additional requirements for the organization of banks with the participation of foreign capital and requirements for their activities [6].

As noted in the research, in accordance with the laws of the country, you can specify the effect of the following types and combinations of constituent documents of legal entities: the charter; Memorandum and Articles of Association; Memorandum of Association

In terms of constituent documents of microcredit organizations, the author, analyzing the opinions of scientists (Yu.S.Povarov, T.I.Brovchenko) [3] and on the basis of studying the legislation of a number of foreign countries (Russian Federation, Kazakhstan, Belarus, Ukraine) comes to the following conclusion: in civil legislation allowed a combination of constituent documents of a legal entity. And this leads to the emergence of various interpretations in the organization of legal entities and certain unnecessary formalities, and in turn is an artificial obstacle to entrepreneurial activity. That is why it is necessary to unify the constituent documents set forth in Article 43 of the Civil Code (charter, memorandum of association, provision), to prevent their combinations. To this end, it is necessary to combine the first and second parts of the 43-th article of the Civil Code, to develop and adopt a new edition, while it is necessary to unify the types of constituent documents. That is why the norm must be stated in the following formulation:

Legal entities, with the exception of business partnerships, operate on the basis of a charter approving them by the founders (participants). Business partnerships operate on the basis of a memorandum of association drawn up by the founders (participants) and to which the rules of this code on the statute of a legal entity apply.

When organizing a microcredit organization in the form of joint-stock companies, a combination of constituent documents is allowed. In this case, first the founder or the founders decide on the establishment. If the joint-stock company is organized by two or more persons, then the foundation agreement will be drawn up between the founders. After that, if a joint-stock company is organized by two or more persons, the charter is approved at a constituent assembly, in the case of a joint-stock company being established by one founder, the charter is approved by that person.

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However, it should be noted that the Law on Joint-Stock Companies does not establish provisions on the approval of its charter in the case of establishment by one founder. And this in turn can lead to the emergence of various interpretations in practice. Because the procedure for the approval of the charter of a joint-stock company with one founder is abstract and there is a gap in the legislation in terms of the approval of the charter by the founder or later by the participants. To eliminate this gap, it is advisable to supplement the second part of Section 1 of the article of the Law “On Joint-Stock Companies and Protection of Shareholders' Rights” with the following provision [2, p.43]:

If the company is established by one founder, the decision on the approval of the company's charter is taken by this founder unilaterally. The first and second part of the 11th article of the Law of the Republic of Uzbekistan “On Limited and Additional Liability Companies” should be stated as follows:

The company's charter is the constituent document of the company. If a company is established by one person, the charter approved by that person is considered to be the constituent document of the company. If the number of participants in the company is increased by two or more people, the charter shall be approved by the constituent agreement drawn up between them.

In conclusion.

The research work also justifies the fact that it is necessary to exclude the rules relating to the memorandum of association provided for in Article 12 and a number of important provisions set forth in this article to be included in Article 13 of this law, defining the rules relating to the company's charter.

In accordance with the Laws of the Republic of Uzbekistan “On the Central Bank of the Republic of Uzbekistan”, “On Microcredit Organizations”, “On Licensing Certain Types of Activities” dated May 25, 2000, as well as the Resolution of the President of the Republic of Uzbekistan dated May 12, 2001 “On the list of licensed activities "And 1 appendices to this resolution, the activities of microcredit organizations are classified as licensed activities, which is enshrined in the Regulation" On the procedure for licensing activities of microcredit organizations ", its approved Resolution of the Board of the Central Bank of the Republic of Uzbekistan dated January 23, 2010 № 3/5 (registration number 2093, April 13, 2010).

In accordance with Article 17 of the Law “On Microcredit Organizations”, the reorganization and liquidation of a microcredit organization is carried out in accordance with the legislation. From this point of view, the reorganization and liquidation of the microcredit organization is carried out.

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ACCOUNTANCY REFORM AND PREREQUISITES FOR THE PREPARING OF FINANCIAL STATEMENTS UNDER IFRS IN THE REPUBLIC OF UZBEKISTAN

Abstract: The article is aimed at rolling of International Financial Reporting Standards in the corporate governance system, problems and prospects for the unification of accounting. A general analysis of the international approach was carried out and the perspective for the preparation of financial statements in accordance with IFRS was given, and the prospects for accounting reform in the Republic of Uzbekistan were also considered.

Key words: International Financial Reporting Standards, National Financial Reporting Standards, increased transparency, improved comparability, increase in analytical capabilities.

Language: English

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Classifiers: Economic research, finance, innovation, risk management.

Introduction

Accounting is a part of management function, carried out by business entities around the world; it is designed to accumulate all the economic information of the organization. Accounting, without exaggeration, is called the "Financial Language of Business". Before 1970s there was no single "Economic Language", and this was one of the major obstacles to the movement of capital.

The active growth of transnational corporations, the globalization of financial markets and international economic integration were the main reasons for the unification of accounting. The growth of international business activity in modern conditions could have succeeded without the introduction of one common financial reporting benchmark for meeting the concern of all interested users.

The need for the transition to international financial reporting standards is determined by the fact that companies and organizations are required to comply with IFRS financial reporting for entering international market, increasing country's export potential, quotation on world commodity and

currency markets, and obtaining loans from world banks.

Currently, the problem of unification of accounting and financial reporting is being decided by the International Financial Reporting Standards Committee (IASB). The IASB develops International Financial Reporting Standards (IFRS) which summarize the accumulated global experience in the formation of financial statements. IFRS are designed to replace countries' national standards and thereby unify the accounting system.

This article is devoted to priorities identified by the Resolution of the President of the Republic of Uzbekistan dated 22 August 2018, that all companies with a state share in the budget, starting from 2020, must submit reports according to international standards. Today, according to IFRS, all banks, as well as joint-stock communities of Uzbekistan, are already operating.

Literature review

Such foreign scientists as J. Maclean, G. Simon, D. Smitburg, T. Levitt, R. Dodge, R. Adams, D. Robertson and others were engaged in the

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problems of unification of accounting and financial reporting. Also in this direction conducted research such Russian scientists as: V.D. Andreev, A.M. Bogomolov, N.A. Goloshchapov, O.E. Terekhova, etc.

At the same time, the development and formation of an international accounting system is associated with the activities of a large number of international organizations. Among them are the International Organization of Securities Commissions, the American Institute of Certified Public Accountants, the Canadian Institute of Chartered Accountants, the Institute of Chartered Accountants in England and Wales, the International Accounting Standards Board (IASB), the European Economic Community, the European Federation of Accountants, the African Accounting Council, Inter-American Association of Accountants, Confederation of Asia-Pacific Accountants, ASEAN Federation of Accountants, South Asian Federation of Accountants, Northern Society of Chartered Accountants, International Federation of Accountants, United Nations (UN), the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting, the Commission on Transnational Corporations and the United Nations Centre on Transnational Corporations, the Organization for Economic Co-operation and Development, etc.

Research methodology

Methodological bases of the study are the work carried out to improve theoretical, normative-legal and organizational basis of auditing activities in Uzbekistan, including the Resolution of the President of the Republic of Uzbekistan # 3946 dated September 19, 2018 "On measures to further develop auditing activities in the Republic of Uzbekistan", The comparative analysis and statistical data of the statutory audit activities issued by the Ministry of Finance were used.

Main part

The international accounting model is developing under the influence of globalization and the internationalization of the economic space. It is designed to ensure the unification of accounting and financial reporting in the international market. Unification and harmonization of accounting is ensured by the development of uniform international financial reporting standards. IFRS include financial reporting standards, underlying assumptions and qualitative characteristics.

The preface to the statement of international financial reporting standards states that neither the IASB nor the International Federation of Accountants may require mandatory compliance with IFRS. The process of adoption by the state of international financial reporting standards (international accounting model) is entirely voluntary, so IFRS are advisory in

nature, but gradually the entire world economic community begins to use these standards for the preparation of financial statements designed for qualified users.

According to S.N. Tashnazarov, "International Financial Reporting Standards are a separate branch of the subject of financial accounting and reporting, which is a part of the conceptual basis of financial reporting, the necessity, development, content, interpolation and theoretical and methodological issues of the international financial reporting standards" [3].

In our opinion, International Financial Reporting Standards is a system of principles and rules for the preparation and preparation of financial statements adopted in the public interest, developed by the International Standards Committee.

At present, in the CIS countries, and in particular in our country, many scientists have already defined the ways of transition to international standards of financial reporting and proposes to teach it as a special course (J. Kurbanbaev, S. Zhumanov, Z.Sagdullaev, N.Mirzarahimova, M.Marpatov A.K.Ibragimov, M.Tulakhadjaeva, N.K.Rizaev, K.B.Urazov, S.N.Tashnazarov) [3,4,5,6,7,8,9,10].

V.A. Terekhova in her work "International and National Accounting and Reporting Standards" [2] identifies the following six forms of application of IFRS in various countries:

1. Using IFRS as national financial reporting standards (Cyprus, Kuwait, Latvia, Malta, Pakistan, Trinidad and Tobago, Croatia).

2. Use of IFRS as national standards, but at the same time having its own national standards on issues that are not reflected in international financial reporting standards (Malaysia and Papua New Guinea)

3. The use of international financial reporting standards as national accounting and reporting standards, while due to national peculiarities IFRS undergo certain modifications (Albania, Bangladesh, Barbados, Zambia, Zimbabwe, Kenya, Colombia, Poland, Sudan, Thailand, Uruguay, Jamaica).

4. Development of national financial reporting standards in accordance with IFRS, while providing additional clarification of international regulations (China, Iran, Slovenia, Tunisia and the Philippines).

5. Use IFRS as a basis for the preparation of national standards, while national financial reporting standards might be more specified or impose additionally certain financial reporting requirements that are not provided for by IFRS (Brazil, India, Ireland, Lithuania, Mauritania, Mexico, Namibia, Netherlands, Norway, Portugal, Singapore, France).

6. Australia, Hong Kong, Denmark, New Zealand, Sweden also develop national financial reporting standards in accordance with international financial reporting standards, and there is a provision in each national standard that compares with IFRS.

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One of the main reasons for the application of IFRS by various countries is V.A. Terekhova calls is the reduction of the company's expenditures on reporting [2]. In our opinion, this position needs comments, since IFRS provides for slightly different rules for evaluating items of financial statements (the concept of "fair value" is widely used) than in the regulatory regulation of accounting. We believe that the cost of reporting in accordance with IFRS

significantly exceeds the cost of reporting under national rules. Reducing the cost of reporting can only be in the case of the preparation of a unified reporting according to the rules of IFRS for the amount of expenses for the preparation of reports according to the rules.

Highlight the main advantages and disadvantages of IFRS in front of the national accounting system (Table 1).

Table 1. Advantages and disadvantages of IFRS to National Accounting Standards

Advantages of IFRS over NAS	Disadvantages of IFRS over NAS
clear logic for building standards	standards imply a generalized nature and diversity of accounting methods, which leads to additional costs for analyzing the "quality" of profits
standards are developed based on international accounting and financial reporting practices	The official language of the standards is English, which makes it difficult to translate
recommendatory character and strengthening the role of professional judgment	lack of detailed explanation of the application of standards
Financial statements prepared in accordance with IFRS should be understandable to all interested qualified users	standards are constantly changing and refined
increasing transparency, improving the comparability of indicators, increasing analysis capabilities and facilitating access to international capital markets	the complexity of the transformation of financial statements from NAS to IFRS, the growth of management costs
The transition of large companies to IFRS will also affect the structure of the labor market of accounting and financial services, the need for specialists in international financial reporting standards will grow	The difficulty of perceiving an IFRS text is that in many cases, instead of the direct instructions customary to an accountant, IFRS contains the logic of making professional judgment

According to Y.Sokolov, "IFRS have a truly international significance, combining the experience of many countries" [16]. In our opinion, this position is not entirely correct. There are no elements of a continental accounting model in IFRS; there is no (even recommendatory) unified chart of accounts for financial and economic activities, which complicates the standardization of accounting procedures; not all developed countries are represented on the Board of the IASB.

Thus, in some countries, the ability to unify the process of accounting training in modern conditions depends on the effective implementation of international financial reporting standards, and the presentation of reliable uniform financial reporting to all qualified interested users.

Analysis of the main publications on the procedure for the transition of national accounting to IFRS showed the presence of three conceptual approaches to implementation:

A.S. Bakaev [1] and O.M.Ostrovskiy [11] propose to develop national accounting standards based on IFRS.

The IASB recognizes reporting prepared in accordance with IFRS only with full compliance with all requirements of the standards. Reporting prepared on the basis of modified standards is not international.

S.A. Nikolaeva [13] proposes to transfer large or socially significant companies to IFRS.

In our opinion, the approach proposed by S.Nikolaeva, the most acceptable in the medium term, but only in the case of legislative consolidation of the possibility of reporting either on the basis of IFRS, or in accordance with national rules. The obligation to submit two sets of financial statements complicates accounting and increases the cost of preparing financial statements.

According to R. Dusmuratov and B. Menglikulov for further reforming of accounting based on IFRS the following priority areas are recommended: "To carry out preparatory work on the application of IFRS taking into account recent

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changes; improving the existing regulatory framework based on IFRS; providing high-quality translation of IFRS that meets the original and linguistic norms of the Uzbek language; eliminating inconsistencies in the methodological aspects of accounting and tax accounting; development and implementation of methodological support (instructions, guidelines, comments) at the industry level; coordination of the terminological apparatus of accounting, auditing, taxation and other areas; staffing (the formation of the accounting profession, training and professional development of accounting professionals); further development of international cooperation" [12].

Many countries, including the Republic of Uzbekistan, in varying degree currently use IFRS. IFRS are allowed to apply for the preparation of consolidated statements by some countries (Russia, Germany, Switzerland), in some countries of the stock exchange they list financial statements of companies compiled on the basis of international standards (Latvia, Estonia, China).

Currently, European countries are converting to reporting in accordance with IFRS; Australia has announced the transition from 2005 to IFRS; the United States since 2002 has been implementing a program to eliminate the differences between the national accounting system and international standards.

The main factor in the transition of national companies to IFRS is the ability to obtain financing for their activities from foreign companies, but for this, the foreign partner needs to provide comprehensive information about the assets, liabilities, income, expenses and equity of the company in a format understandable to foreign analytics.

Other factors causing the transition to IFRS: the establishment of strong long-term economic relations with foreign counterparties, the establishment of joint ventures, the entry of companies into international stock markets, etc.

In connection with the transition of the Republic of Uzbekistan to a new stage of development, there is a need for ongoing reforms in existing system of accounting and reporting.

The Republic of Uzbekistan is also gradually transferred to the IFRS. The following documents have been adopted within the framework of these transitions: Resolution of the President of the Republic of Uzbekistan №3946 dated September 19, 2018 "On Measures for Further Development of Audit Activities in the Republic of Uzbekistan"; Decree of the President of the Republic of Uzbekistan of April 24, 2015 №4720 "On Measures to Introduce Modern Corporate Governance Methodologies in Joint Stock Companies"; Resolution of the President of the Republic of Uzbekistan No. PP-1438 of 26.11.2010 "On priority directions of further reforming and

improving the stability of the financial and banking system of the Republic in 2011-2015 and achievement of high international rating indicators"; "Regulations on the procedure for issuance of an auditor qualification certificate". Order by the Minister of Finance of the Republic of Uzbekistan №144 of November 14, 2018 has been registered by the Ministry of Justice of the Republic of Uzbekistan on December 21, 2018 with the order 3105.

Article 22 of the new edition of the Law of the Republic of Uzbekistan "On Accounting" establishes the legal basis for the application of international financial reporting standards in our country as "The requirements for financial reporting requirements established by international standards are set out in international accounting standards". The new revision of the law is consistent with international best practices and international standards [14]. Based on the above, it can be concluded that today it is expedient to study the international financial reporting standards as a separate line of financial accounting and reporting.

Therefore, there is a need to adopt a consistent program for the implementation of IFRS, ISA and the International Evaluation Standards (IES), the functioning of which will lead to the formation of high-quality information. The quality of information depends on financial and cash flows, business activity and, accordingly, the country's macroeconomic indicators. The government has set the goal of accounting reform as bringing national accounting rules in line with the market business model based on international financial reporting standards. To achieve the goal of the program, it is necessary to solve certain tasks: to form national accounting and reporting standards that will be understood by qualified users, to provide methodological assistance to accountants and financial analysts, to ensure the formation of a regulatory accounting framework, to conduct training for economic services of organizations, enhance the role of the accountant's professional judgment in the decision-making process, actively harmonize and harmonize accounting and reporting, cooperate with the International Federation of Accountants, the International Financial Reporting Standards Committee and, as a logical conclusion of the reform, adopt IFRS as an alternative to national accounting and reporting standards.

In our opinion, at present, the basis for reforming accounting in Uzbekistan will be the development of the "Concept for the Development of Accounting in the Republic of Uzbekistan", which awakens to be a framework document, a logical continuation of the "Implementation Program for International Financial Reporting Standards" implemented, albeit with the extension of deadlines.

In our opinion, the approach to reforming accounting, by adopting a Concept, corresponds to the logic of the reform being carried out, is a compromise

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option, and the concept should eliminate a number of shortcomings:

1. The exception is the absence of specific deadlines for its implementation, clear-cut stages and terms for their implementation, which is a negative factor for its implementation.

2. Focusing on the high costs associated with the preparation of consolidated financial statements of organizations under IFRS through the transformation of the data NAS. However, it does not take into account the fact that the cost of preparing IFRS conversion reports are more significant. The concept should emphasize that the duplication of statements in the format of IFRS and NAS, a temporary phenomenon associated with preparing the infrastructure for the application of IFRS.

3. In the Concept, it is necessary to point out the insufficient participation of professional accounting organizations in the regulation of accounting, but it is overlooked that there are objective reasons for this - the legislation provides for state regulation of accounting and reporting. Strengthening the role of accounting associations, in our opinion, is possible with a clear definition of the functions of these professional organizations in the process of developing the rules of the accounting process.

4. In the Concept, it should be noted that the usefulness of accounting information is achieved by using IFRS as the basis for constructing national accounting.

Information prepared according to generally accepted rules, deviations from which lead to loss of value of accounting information. Reporting prepared using only a few elements of IFRS will mislead qualified users, which will reduce the quality of management decisions. However, we consider it possible to use a gradual transition to IFRS by bringing together national methodologies, the ultimate goal of which should be full recognition of IFRS as a national accounting system.

Thus, reforming the accounting and reporting system in accordance with the requirements of IFRS is an important step towards efficient market relations. Currently, this problem has received much attention from both government agencies and professional organizations. As a result of the ongoing reform, professional organizations of accountants are actively working in the Republic of Uzbekistan, including the National Association of Accountants and Auditors of Uzbekistan and the Chamber of Auditors who are members of the International Federation of Accountants, participating in the development of national accounting standards and the implementation of international financial reporting standards, etc.

Thus, it can be argued that the development of national accounting occurs in line with global trends, namely, in accordance with IFRS. Translation of reports to IFRS increases the information content of the data provided, as any qualified user has the

opportunity to obtain information that is based on common methodological principles and there is no need for time-consuming analysis of the "quality" of profits.

Conclusion

Implementation of IFRS is a work for the future, which will be increasingly associated with foreign economic activity, attracting foreign investment and related technologies. In addition, IFRS are relevant for evaluating the management of companies, because it shows the effectiveness of management decision-making. In general, the organization of accounting will develop through the selection and application of more sophisticated methods and techniques for grouping credentials, forms of accounting registers, the correct and rational combination of analytical and synthetic accounting and, ultimately, the use of the most progressive forms of accounting using automated systems [15].

In our opinion, the main directions of development of national accounting at the present stage are:

(Amendment of the Law of the Republic of Uzbekistan) the adoption of a new version of the Law on Accounting, which meets the requirements of a market economy and the concept of accounting development in our country; improvement of legislation in the field of accounting and management accounting, taxation;

convergence of national accounting with international financial reporting standards;

development and adoption by professional associations of accountants of methodological recommendations on complex accounting issues (for example, on the use of market value in the accounting process), industry guidelines (for example, on the calculation of cost);

strengthening control over the correctness of accounting and financial reporting by business entities;

professional development of accountants and auditors, including IFRS training.

The Ministry of Finance of the Republic of Uzbekistan is in favor of preserving the functions of regulating the accounting and reporting for the state and the gradual convergence of national accounting standards and IFRS.

In our opinion, the applicable approach to the development of accounting is more acceptable. We present the following arguments:

this approach does not imply amending the Constitution of the Republic of Uzbekistan, since the basic law of the country provides for state regulation of accounting, and not regulation of accounting by professional organizations and associations;

full transition to IFRS is practically impossible in the near future, as the country has not trained qualified personnel, there is a high correlation

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between accounting and tax base calculation, there will be a sharp increase in accounting costs in accordance with IFRS (hiring a professional appraiser, information costs, retraining expenses for account workers, etc.)

the assertion that the full adoption of IFRS as national accounting rules will lead to a reduction in government spending is not justified, because there will be additional costs for the official translation of IFRS (from English), bringing the national regulatory framework and terminology in accordance with international standards, paying “royalties” to the International Financial Reporting Standards Committee for publishing standards, etc.;

the transfer of accounting functions to professional associations will lead to an increase in organizations' costs for consulting services.

One of the main advantages of national accounting before IFRS is the existence of a single chart of accounts for financial and economic activity. With the rapid transition to IFRS it is difficult to develop a single chart of accounts that meets all the requirements of international standards, which may lead to its cancellation.

The Ministry of Finance of the Republic of Uzbekistan, unlike any professional organization, has an “administrative resource”, which will allow for a more qualitative reform and at the same time not disturbing the balance of the use of financial statements for state and economic purposes, etc.

Thus, the process of reforming the national accounting in accordance with IFRS, in our opinion, should be coordinated by the Ministry of Finance of the Republic of Uzbekistan.

It should be noted that the harmonious development of accounting in our country is not possible without the development of professional associations, making decisions to reform accounting and reporting should be supported by the Institute of Professional Accountants.

Particular attention should be paid to the development of auditing activities in Uzbekistan. The transition to international financial reporting standards will raise the requirements for auditing organizations, including and the transition to international auditing standards (IAS). It is necessary to change the approach of confirming the financial statements of business entities by audit organizations, i.e. Auditors should confirm the accuracy of financial statements, and not tax calculations.

To move to reporting in accordance with IFRS, it is also necessary to be guided by International Evaluation Standards (IES) - this is another area that is closely related to the development of national accounting.

Thus, the development of national accounting at the present stage is closely linked to international financial reporting standards. The logical conclusion of the process of reforming accounting and reporting should be the full adoption of IFRS as national standards for large and medium-sized businesses, and we do not exclude the possibility of developing our own national accounting methods for small businesses before the appearance of a corresponding international standard. The introduction of international financial reporting standards should occur in parallel with the implementation of the IAS and the IES.

Based on the above considerations, we consider it appropriate to set up Uzbekistan Institute of Accountancy, which is an independent professional body of Accountants engaged in the development of general accounting principles and national standards, summarizing and introducing the best practices in accounting, accounting and professional development of accountants.

The main purpose of the Institute is to introduce IFRS, submit to the Ministry of Finance of the Republic of Uzbekistan for the development and approval of national accounting standards, to introduce advanced foreign experience, to improve the quality of accounting and professional development of professional accountants and to develop accounting in the Republic of Uzbekistan to the international level.

In our opinion, the transition to IFRS is a complex, ambiguous process that must take place in accordance with the pace of development of economic reality and correlate with the willingness of the current accounting system and accountants-practitioners to the relevant innovations.

The deep integration of the economy of Uzbekistan with the processes of globalization, put a number of requirements for the evolutionary development of accounting as the main source of financial information. Regarding the flexibility of accounting processes when implementing IFRS, these requirements can be expressed by the following illustration: Fig.1.

Based on the above, it can be argued that the transition of the Republic of Uzbekistan to reporting under international financial reporting standards is a long process, it requires a phased, correct, logically aligned approach. With the transition of the Republic of Uzbekistan to IFRS, one should not expect a sharp influx of foreign investment into the country. But this will be an important moment for the movement of capital between the Republic of Uzbekistan and the international community. Increasing the transparency of organizations will mean that investments will become less risky for investors, and therefore cheaper.

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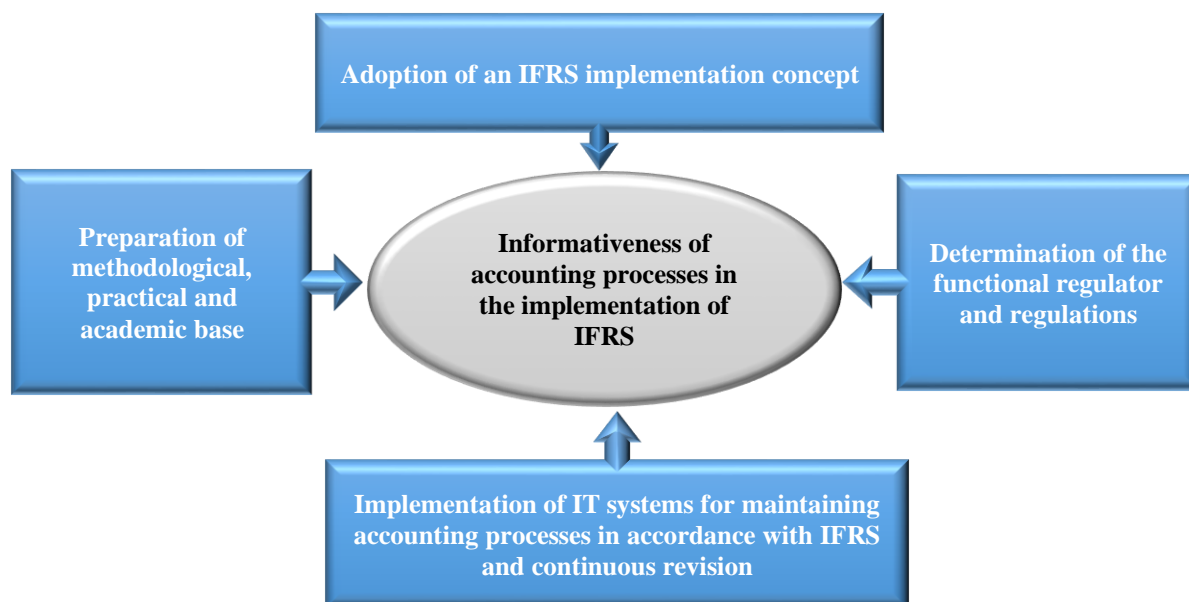


Fig.1. Requirements for the implementation of IFRS in accounting processes.

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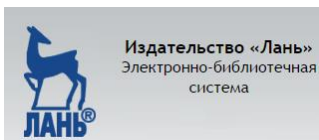
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