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THE ISSUES OF THE CREATING AN INTERACTIVE MAP OF TASHKENT CITY POPULATION

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Abstract

In this article is given data about the period from the date of the creation of maps to the modern maps that are currently being created. It is about the map of the Mercator, created on the basis of the first cartographic projections, and other maps made before and after it. At the same time, one of the latest achievements of cartography and Geoinformatics is the creation of interactive maps, as well as the advantages in their use. Nowadays, interactive maps are created in various Geographic Information Systems (GIS) programs that are widely used over the Internet. In this article, the creation of interactive maps will be considered in the online application of ArcGIS in the case of Tashkent residents. The quantitative data are based on the open data of the State Statistics Committee of the Republic of Uzbekistan.

Keywords---interactive map, ArcGIS online, Tashkent, GIS.

Introduction. In the XXI century, when humanity is changing and developing rapidly, it is making inventions and discoveries that will shake the new world. These inventions and discoveries are often seen and heard with the help of the mass media, not only on Earth, but also on Mars and other planets, where there is a huge search. Techniques and technologies are gaining high marks year after year. The worldwide discoveries, which today amazing all, are tomorrow sealed in history.

If we look at history, how many fights and peace struggles mankind has ever faced. He also made great strides in the field of science and education. For example, the creation of maps dates back to the earliest Jewish community. People have been using cartographic images to describe orientation, other tribal lands, hunting and grazing areas [1]. At the same time, they left stone markings on the walls of the caves so that they could return to the settlements of that time, and then the views of our great thinkers about the globe, first maps of the world, globe-shaped ideas, meridians and parallels, can be used as a base for the development of the world until now.

One of the earliest maps was associated with the name of the great Greek scholar Ptolemy. He published a research book "Geography" about 150 AD. It contained thousands of directories and maps of the world. This system revolutionized the geographical thinking of Europe by introducing mathematical rules for mapping [6].

Until the first maps of the first world appeared in the early 16th century, the great cartographer Gerardus Mercator of Belgium developed mathematical mapping projections in the middle of the sixteenth century, and in 1569 created a map of the world based on this projection.

With the development of cartography and geo informatics, new, more advanced cartographic products have emerged. They are based on the rapidly expanding GAT programs. GIS software has a database that is important for data collection, analysis and updating. These programs are ArcGIS, MapInfo, QGIS and many others, with the ability to create maps on a variety of topics. GIS programs are also available online. Thousands of online and offline maps are now being created across the Internet.

Various researchers have commented on interactive maps. For example, according to the opinion of I.S. Sinitsin, the interactive maps are geographical maps printed on the same paper, but look "live" and "dynamic". Thus, an interactive map can be assumed to be an electronic geographic

map containing a two-way interactive interaction between the user and the computer and a visually active geographic information system [2].

In I.A. Nadirov's research, interactive maps will help you determine the geographic location of a particular region, its climatic conditions and religious characteristics, time zones and much more. Interactive maps display analytical, statistical, and other data effectively and visually [3], it has been reported. In fact, through interactive maps, the user has a high chance to obtain the necessary information at the right time.

Methodology.

Many GIS programs are used to create interactive maps. The most common of these are online applications at <http://imapbuilder.com>, maphub.net, Map Business Online, www.maptive.com, www.espatial.com, cartovista.com, www.sacmeq.org and www.arcgis.com. These programs have created hundreds of interactive maps that are effectively used to address a wide range of issues across countries. There are several developed countries in the creation and use of interactive maps such as The United States, Canada, Great Britain, Austria, Germany, and China.

Interactive maps are also widely used in population surveys. For example, "Census maps". These maps are made in an interactive manner and are useful for census registration. It is clear that countries are registered every 5 or 10 years. Developing countries, such as the US and Canada, rely on the Census Map for census. According to the Presidential Decree, the census of the Republic of Uzbekistan will be implemented in 2022.

The online program www.arcgis.com was used to create an interactive map for Tashkent residents. The main program window is illustrated in picture 1.



Picture 1. The main window of www.arcgis.com.

The digital data is presented on the map in a statistical way, based on the population data of the State Committee on Statistics of the Republic of Uzbekistan.

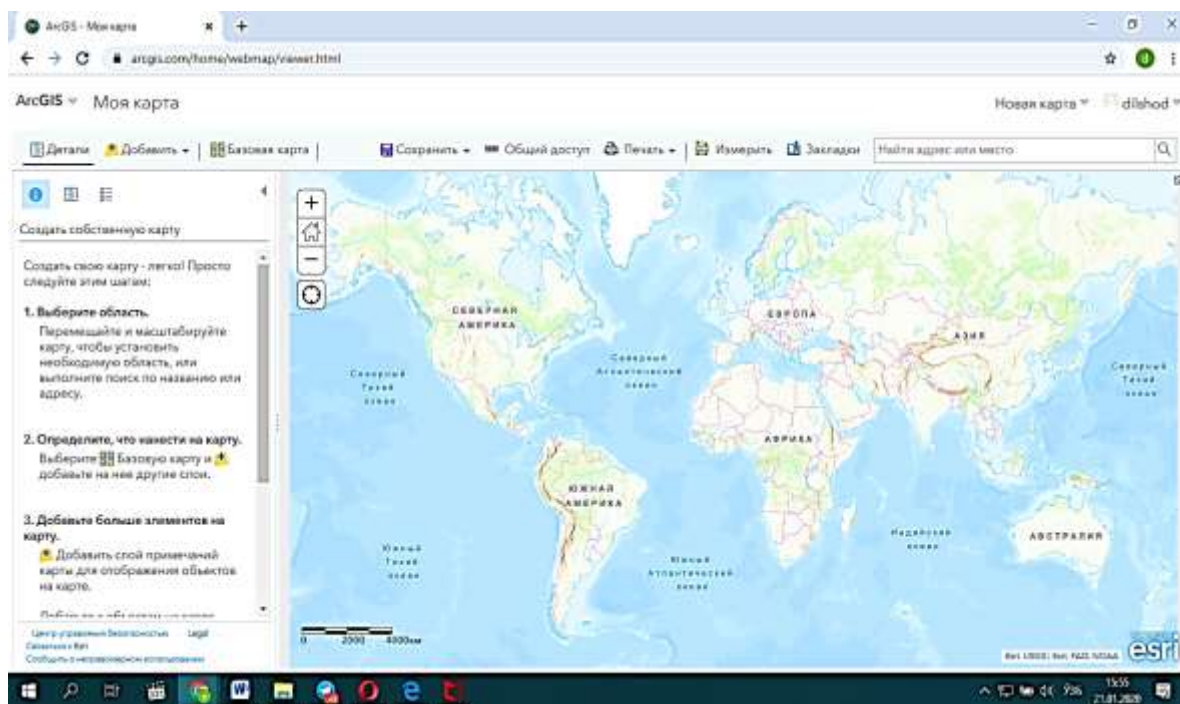
1-table

Area and population of Tashkent city districts

N	Districts	Year of establishment	Area, sq. Km	Population, thousand people	The number of men, one thousand	Number of women, thousand	Density, 1 sq. km / person (2019)
1	Bektemir	1990	20,5	34.3	16.2	18.1	1673.2
2	Mirzo Ulug'bek	1935	31,9	271.0	134.5	136.5	8495.3
3	Mirobod	1929	17,1	136.3	66.1	70.2	7970.8
4	Sergeli	1967	56,0	181.5	87.2	94.3	3241.1
5	Olmazor	1970	34,5	359.4	173.8	185.6	10417.4
6	Uchtepa	1977	28,2	265.8	131.3	134.5	9425.5
7	Yashnabod	1968	33,7	231.0	112.9	118.1	6854.6
8	Chilonzor	1963	30,0	244.2	120.4	123.8	8140.0
9	Shayhontohur	1929	27,2	337.8	165.6	172.2	12419.1
10	Yunusobod	1936	41,1	330.8	159.7	171.1	8048.7
11	Yakkasaroy	1936	14,0	118.7	57.9	60.8	8478.6
	Total, Tashkent	Up to the 2 century	334,8	2510.8	1225.6	1285.2	7514.9

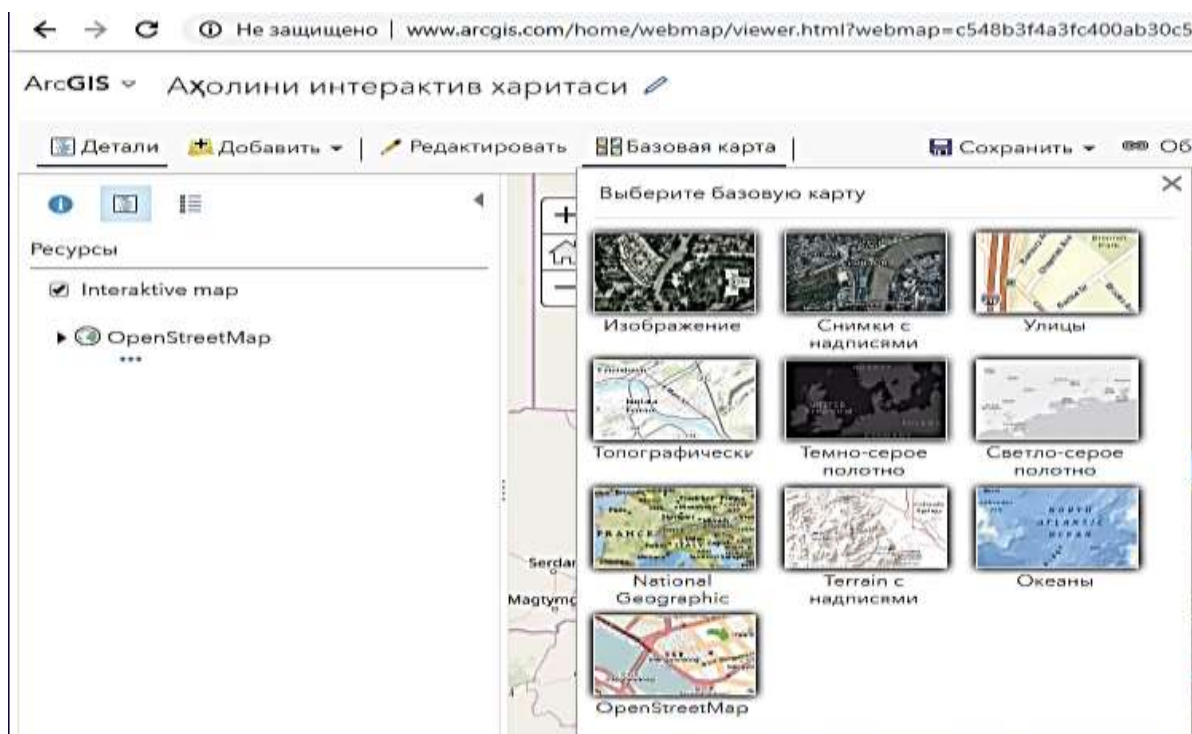
The table is based on open data from the State Statistics Committee of the Republic of Uzbekistan [4].

Result and discussion. To work at www.arcgis.com, you must first register online at www.arcgis.com. Email must be available at [gmail.com](mailto:) to register. Sign up at www.arcgis.com via email created at [gmail.com](mailto:). Following this process, an online application at www.arcgis.com will be available and an electronic map of the world will be displayed on the monitor screen (Picture 2).



Picture 2. World map at www.arcgis.com.

It can be used to create conditional characters and legends from the left side of the map. www.arcgis.com in the "Bazovaya map" section of the online program there are 10 electronic base maps of different views of the World (Picture 3).



Picture 3. The sequence of the base maps in www.arcgis.com.

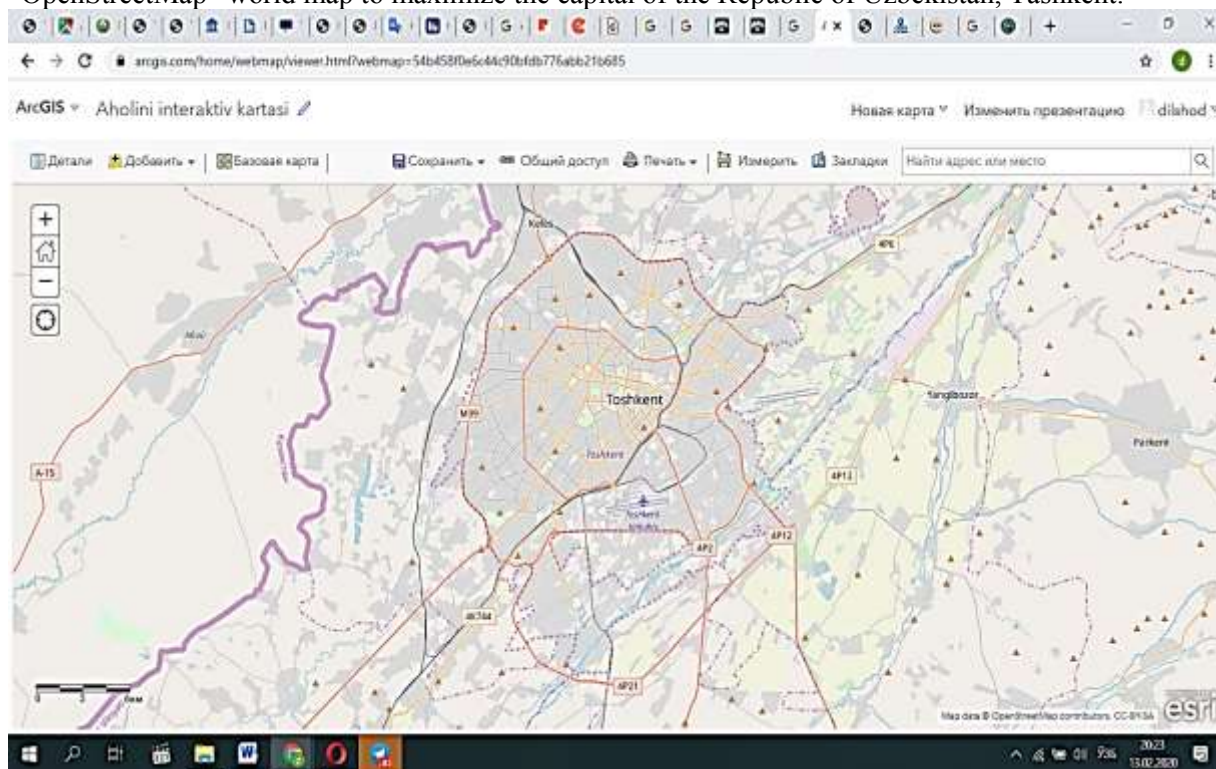
Users can carry out various cartographic works with the help of these maps and conduct an analysis. The sequence of maps is as follows: "Image", "Images with labels", "Streets", "Topographically", "Dark gray canvas", "Light gray canvas", "National Geographic", "Terrain with labels", "Oceans", and "Open Street Map". Every of them can be used. The list of the base maps of

www.arcgis.com is given in the picture 3. These maps provide information that allows you to use the world wide open.

It is possible to carry out cartographic works of the desired type through electronic maps. Without electronic maps, it is difficult to imagine the development of modern technologies, living in harmony with the Times. Because the whole world will appear as a palm to your eyes by using electronic maps. Such maps are also reflected in car navigators, and in mobile applications without a lot of Internet and internet on phones. By entering the address to which you will go in their search icon, it will show you the location where it is located. This makes it quick and easy to reach the address.

In the course of the study, an attempt was made to create an interactive map of the population in the www.arcgis.com online program. As mentioned above, it is possible to see 10 different view world maps in the application database. With their help, it is possible to solve many tasks and conduct various studies.

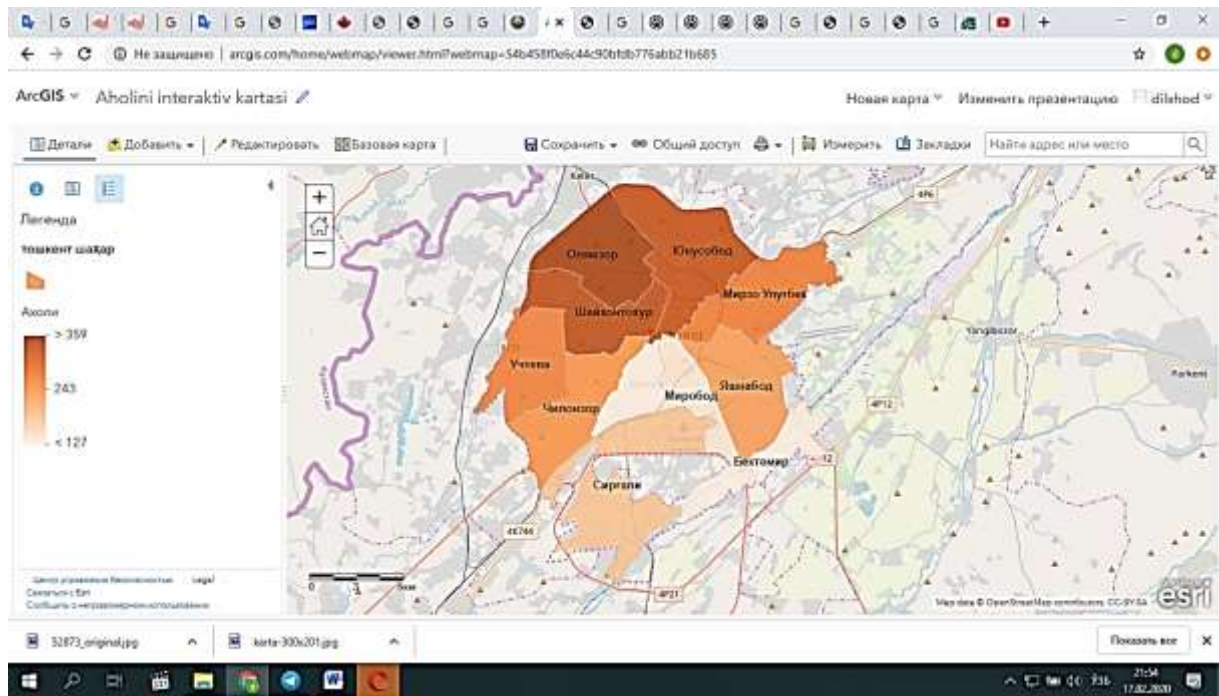
In this regard, you must select one of the base maps. In general, these maps can be modified at any time. It largely depends on which topics you work with. You can select general geographic or different thematic maps. In order to create interactive maps of the population, we will use "OpenStreetMap" world map to maximize the capital of the Republic of Uzbekistan, Tashkent.



Picture 4. View of Tashkent in "OpenStreetMap"

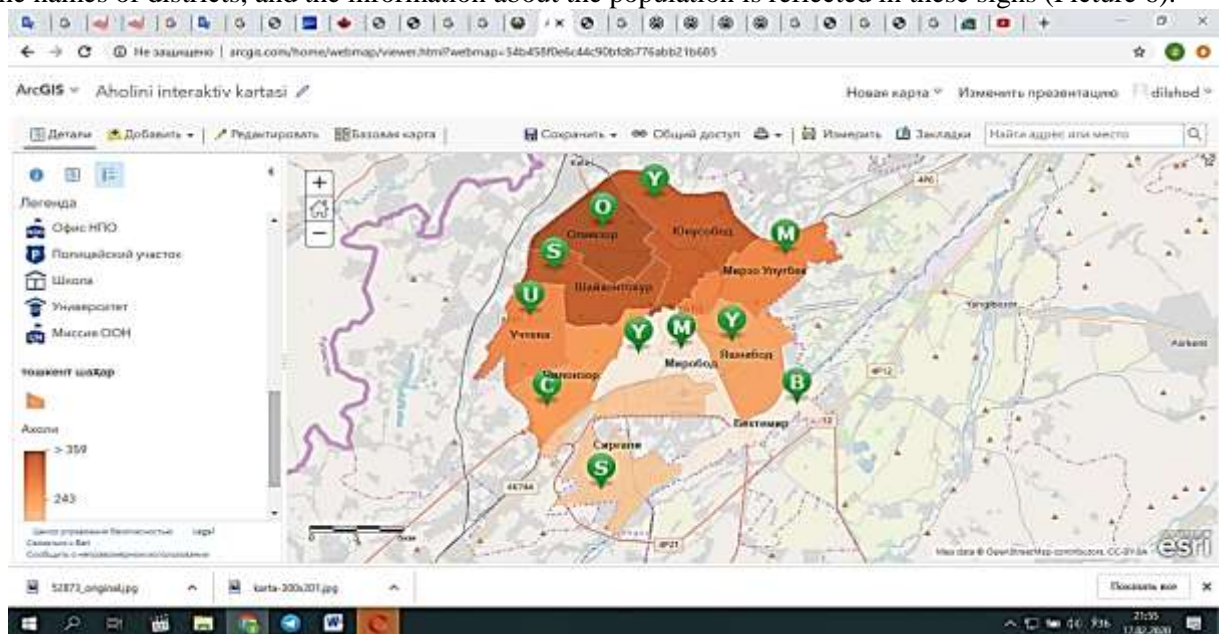
The closer the map is, the farther it is to see the districts, neighborhoods, streets, buildings and structures. Zoom and zoom can also be done by the "+" and "-" symbols. Location information is also provided on Yandex and several other online maps.

The number of residents of the city of Tashkent in the "OpenStreetMap" is indicated in the cartogram method in terms of districts. In doing this, ArcGIS application was used. Initially, the program reduced the boundaries of the city and districts of Tashkent, and then created a database on the basis of digital data on the population. Ready map www.arcgis.com online was exported to the program (Picture 5). The exported map was downloaded onto the map in the online application and it was separated by colors compared to other regions. It is convenient in carrying out further work on the map on one side.



Picture 5. Division of districts by population in program A

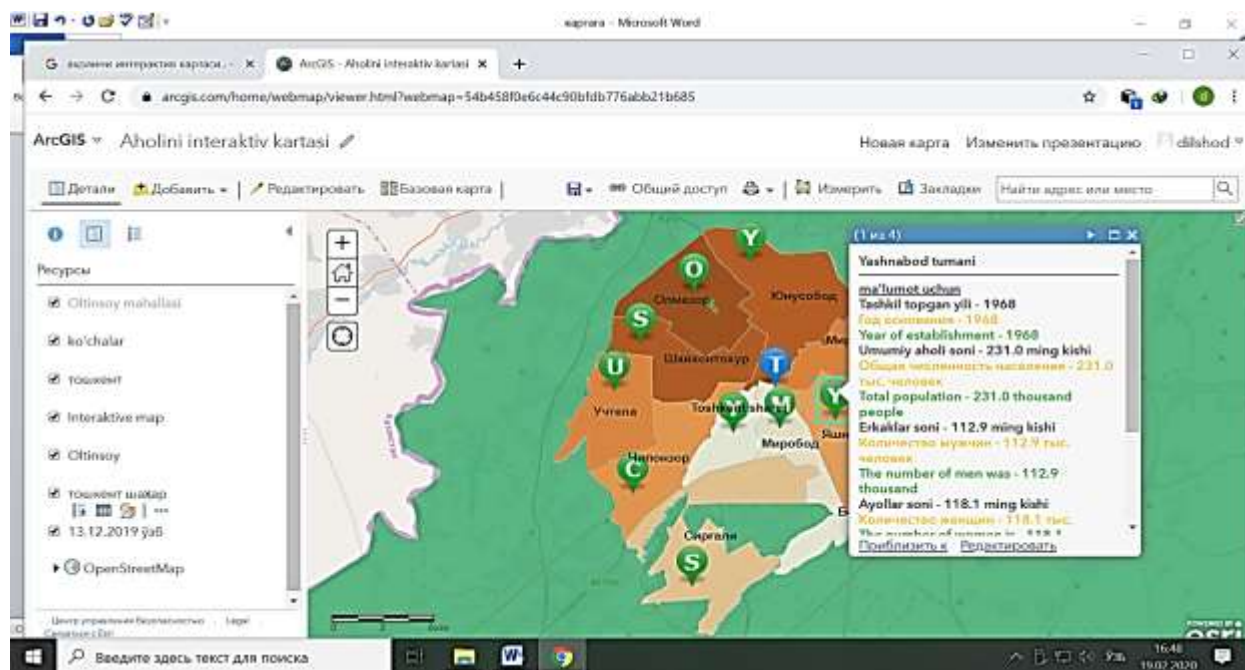
When creating an interactive map in ArcGIS online, a character from the legend is selected and placed on it in the regions. It can be recognized by different characters based on the information to be entered on the map. In the creation of an interactive map of the population of the city of Tashkent, characters with letters were used. Each character on the map represents the capital letters of the names of districts, and the information about the population is reflected in these signs (Picture 6).



Picture 6. Placement of data in an interactive state

Data for each district were entered on the basis of the Table 1 Above. In each district, data such as the area, the total population, the number of men and women, the population density were placed in the year in which the population was formed. Data were entered on the map in Uzbek, Russian and English (Picture 7).

In addition, there is an opportunity to visit the site of the District Public Services Center and use it through the specified link.



Picture 7. Information by region

Conclusion. To sum up, it is very easy to create and use interactive maps. Because these maps are online, they can be used not only by Tashkent or the Republic of Uzbekistan, but also by the whole world. Interactive maps are made in a variety of areas and for different purposes, allowing you to quickly and easily obtain the information you need.

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