

Development of Open Data System for Budget of Saint Petersburg

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Abstract

Open data is a concept describes a particular data is freely available to anyone without any restrictions. Due to this fact lots of citizens' problems can be solved by means of different services or projects, large possibilities for commercial activities that improve government economics arise, government structures improve their efficiency and the governance itself becomes more transparent. This idea is very popular and fast growing. Government of Saint Petersburg supports an open data idea by publishing city's budget in the Internet.

So, idea inspired to develop a web-based system operates with budget instances with perspectives of implementing a semantic search within budget data.

System has a client-server architecture, based on Google App Engine, using Model-View-Controller idea, written with help of Java and Struts framework.

Initially, source data was a rather large file with 500 pages, then it was parsed to the Resource Description Framework (RDF) format and was divided on three parts. These files described classes, properties and instances of budget and its structure. As a result, all these files contained about 100 000 rows. Then data was written to a database with specific characteristics support organization of semantic search. This process requires an unusual solution, so a special event-based parser was implemented.

After the database was organized, system needed an input-output mechanism allows user to interact with uploaded data. API and web user interface were developed using Google App Engine platform with the help of Apache Struts tool.

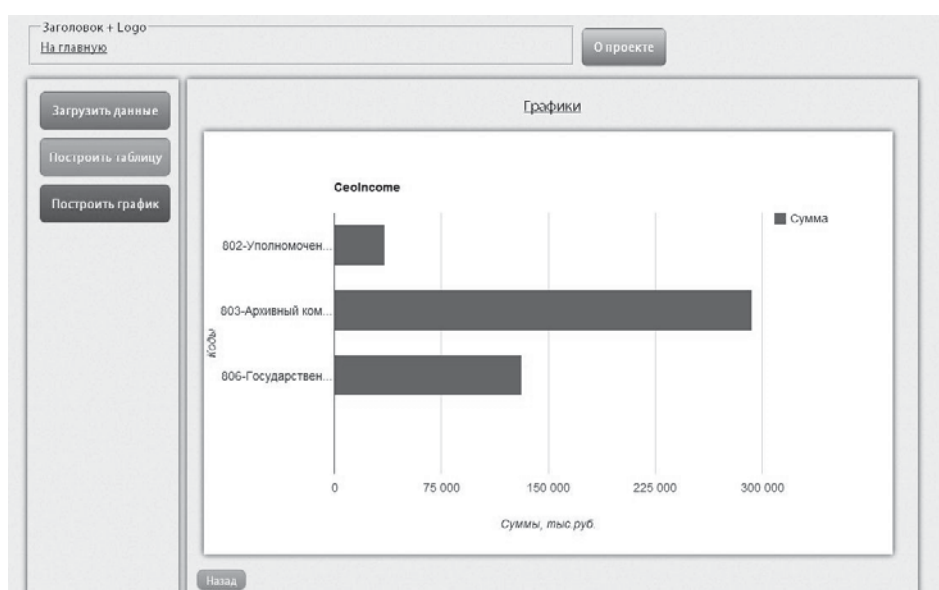


Fig. 1. Budget expenditure chart

Result of a short query is shown in the Figure 1. System was asked to compare particular budget's items of expenditure and to visualize it.

As a result, developed system proved its efficiency and got positive feedback having become one of the winners in "The Big Bang" projects contest, which took place in Saint Petersburg in October, 2012.

In the future we plan to add to the ontology the concepts connected with the budget revenues and to examine the budget structure of other cities in order to ensure the comparability of ontologies.

Index Terms: Open data, Semantic network, Google App Engine.