

УДК 069.1+069.5

DOI 10.28995/2073-0101-2019-1-235-246

Svetlana E. Yalovitsyna

Karelian Research Centre of the Russian Academy of Sciences, Petrozavodsk, Russian Federation

Valentina V. Volokhova

Petrozavodsk State University, Petrozavodsk, Russian Federation

Dmitry Zh. Korzun

Petrozavodsk State University, Petrozavodsk, Russian Federation

Semantic Approach to Presenting Information of Thematic Museum Collections

Abstract

The article sums up the experience of using the Semantic web technologies and ontological modeling in the presentation of thematic collections of a museum in a case-study of the Museum of history of Petrozavodsk State University (PetrSU) for digital services construction. The main reason for turning to these technologies was the need to improve the efficiency of information retrieval in the Museum database. The former relational database did not meet these goals, and another approach, a semantic one, was chosen. The experience allows to contend the advantages of using such technologies in a thematically limited array. The observational information in the collection allows to approach the issue of ontology and semantic relations at a new qualitative level. On the basis of the created knowledge base, mobile applications for the user (Museum visitor) and a 'client for staff' for information support and assistance services have been developed. The article discusses possible scenarios of working with these services, as well as the advantages of using a semantic network to create them. As an example it assesses a thematic collection of exhibits about the student construction brigades movement. Some of the described services have already been implemented, some are under development. The article argues that the proposed solution can significantly increase the information impact of Museum objects by providing semantic annotation of Museum objects, identifying links between Museum objects, allowing the visitor to follow their own trajectory in studying the exposition of the Museum, collecting new information, expert evaluation of the information provided by the visitor. The semantic approach is applicable not only to the Museum development, but also to solving other application task. Any information systems using the mechanisms of search for the formal coincidence of characters can be extended by methods of the semantic network analysis. Participation of users in updating the description of information objects with an expert evaluation option for received information make annotation work more effective. In particular, this applies to thematic collections, to which the specialists usually apply.

Keywords

Museum, thematic collection, museum information system, knowledge base, semantic network, ontology, information search optimization, mobile application.

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Grant information

The study was carried out under state order.

The research is implemented within the Government Program of Flagship University Development for Petrozavodsk State University in 2017–2021.

About authors

Yalovitsyna Svetlana Erkkievna, PhD in History, associate professor, Institute of Linguistics, Literature and History of the Karelian Research Centre of the Russian Academy of Sciences, vice-director, Petrozavodsk, Russian Federation, +7-921-524-30-61, jalov@yandex.ru

Volokhova Valentina Vladimirovna, PhD in History, associate professor, Petrozavodsk State University, Institute of History, Political and Social Sciences, department of Russian history, assistant professor, Petrozavodsk, Russian Federation, +7-814-271-96-49, vavolokhova@yandex.ru

Korzun Dmitry Zhorzhevich, PhD in Physics and Mathematics, associate professor, Petrozavodsk State University, Institute of Mathematics and Information Technology, department of computer science, assistant professor, Petrozavodsk, Russian Federation, +7-814-271-10-84, dkorzun@cs.karelia.ru

Submitted 10.08.2018, published (for citation):

YALOVITSYNA, S. E., VOLOKHOVA, V. V., KORZUN, D. Zh. Semanticheskii podkhod k predstavleniyu informatsii muzeinykh tematicheskikh kollektzii [Semantic Approach to Presenting Information of Thematic Museum Collections. In Russ.]. IN: Vestnik arhivista / Herald of an Archivist, 2019, no. 1, pp. 235-246. doi 10.28995/2073-0101-2019-1-235-246

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Полностью материал публикуется в российском историко-архивоведческом журнале ВЕСТНИК АРХИВИСТА. Ознакомьтесь с условиями подписки [здесь](#) .