Abstract

Objective

The aim of this work is is to analyze the technology servlets and semantic Web, to develop an approach of creation a servlet that access to ontological data, and its practical implementation.

The relevance of the research

The relevance of the topic of this thesis lies in the fact that today the Internet is impossible to imagine without a Web-based applications and more and more developers want to build distributed transactional applications and take advantage of the speed, security and reliability, provided server technologies. One such technology is a Java-servlet. Web-based applications using servlets provide these needs, because based on the specifications of J2EE (Java Platform, Enterprise Edition). Servlets also allow you to create intelligent Web-based applications using modern technology - the semantic Web. Application of semantic technologies in the developing servlets will perform their implementation on a qualitatively new level. This approach is based on the use of a single model of knowledge about a certain subject area, agreeing on the basis of this model descriptions of various objects containing knowledge, increasing the accuracy of dissemination and retrieval of required knowledge. Due to this can be overcome many of the barriers of knowledge dissemination.

The problems are solved in the work

Following tasks are solved in diploma progect: disclosure of such basic concepts as a platform for J2EE, Servlet, Web-application, Web-server, Jena API, Semantic Web, RDF, OWL, ontology, etc.; demonstration of how to create a simple servlet that reveals the work and the main features of client-server application, guidance of technical requirements, develop on approach to build applications using servlets that access the ontologies at Web developers, and practical implementation of approach.

Achieved results

Achieved result of this work is theoretical and practical consideration of technologies such as servlet and the Semantic Web, as well as techniques of programming Web-based applications and servlets. A structured material on the resource and operational centers Ukrainian grid and developed ontology. The approach to build applications using servlets that access to the

ontology, at Web developers. Based on established ontologies and the proposed development practices Web-based applications created the existing information system of the educational segment of the National Grid infrastructure in Ukraine.

The scientific novelty

The scientific novelty of this work is to combine the two current technologies - Semantic Web, and servlets, creating the ontology and the implementation inference ontological data using specialized software interfaces, providing descriptions of how to integrate ontologies in Web-application programming servlets, which operate with data inference, as well as the unification of all technologies in one system.

Practical value

The practical value of the work consists in the possibility of applying the proposed approach, a servlet that access to the ontology level Web developers. And also use the developed information system in the Grid portal for data centers isolated grid.

Conclusions and recommendations

In the diploma has been substantiated the relevance and novelty of the topic, achieved the main result, namely, the proposed approach is a Web-based applications using servlets and ontology at the level of Web developers.

Based on established ontologies and the proposed development practices Web-based applications developed by existing information system of the educational segment of the National Grid infrastructure in Ukraine, which gives users access to information on the existing infrastructure of the educational segment, its resource-operating centers.

The work consists of 102 pages contains 4 tables, 39 illustrations and 6 annexes. In preparation for use of the literature from 30 different sources.

Work on the 101 pages contains 4 tables, 39 illustrations and 6 applications. In preparation for use of the literature from 31 different sources.

Keywords: J2EE, JAVA-SERVLET, SEMANTIC WEB, ONTOLOGY, JENA API, GRID INFRASTRUCTURE.