

SemanticWeb.org – Grounding Technologies Evaluation – v 0.1

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1. Introduction

The aim of this document is to present the evaluation of the selected technologies and tools that may constitute the future building blocks of the semanticweb.org portal. This document is a very selective work as only limited number of technologies and tools may be evaluated with manpower resources dedicated to this task. The document is going to growth over time as the evaluation work progresses.

The version 0.1 provides only a list of the suggested technologies and tools that should be evaluated in the coming month. New technologies and tools may be added and some may be removed from this report.

The aim of the authors is to have this work practical and this document short. Only technologies and tools really tested in programming environment should be presented in here. Any evaluation based on FAQs or white papers should not be included in this document as long as not tested in practice. It is also the intention of the authors to spend as much as possible time on evaluation and prototyping of various portal's features with given technologies or tools and not on the production of overviews that can be easily found anywhere. Links should be provided to forward a reader to any further reading.

The document is structured as follows. N-tier, J2EE architecture is presented in section 2. Section 3 proposes the set of given technologies that are going to be evaluated first. Finally some of the tools, which are going to be used in this project, are discussed in section 4.

2. Architecture

The N-tier architecture is going to be used to build semanticweb.org portal. As presented by Alfonso et al. [1] N-tier architecture is the result of applying the 3-tier model in its full generality and increased relevance of the Internet as an access channel. This architecture is presented on figure 1. The reader should refer to Alfonso et al. book [1] to understand the complexity and advantages of the N-tier architecture.

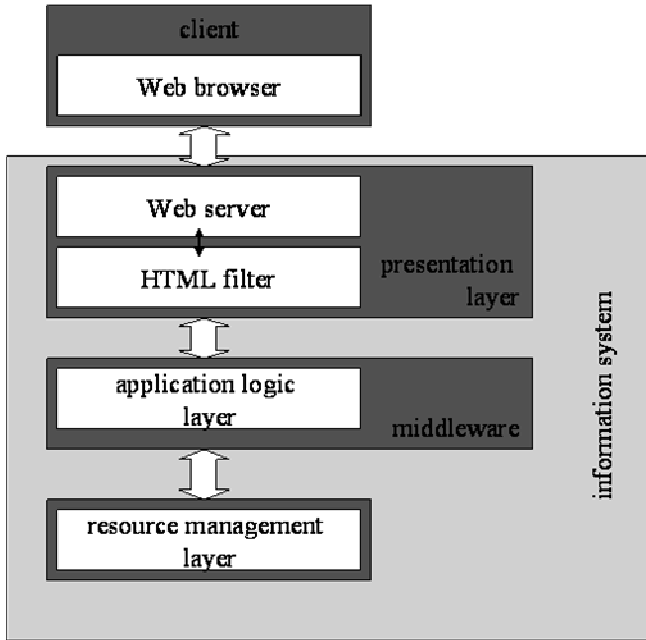


Figure 1: An N-tier system [1]

J2EE (Java 2 Enterprise Edition) architecture is the example of application of the N-tier model (the reader should notice that we do not refer here to J2EE implementation, but to architecture that has been developed with the Java Community Process [2]). The decision to select J2EE architecture is rather pragmatic than fully rational. There is a very competitive N-tier architecture offered by Microsoft in the .Net platform. Having limited number of manpower resources and already good familiarity of the J2EE platform, the authors decided not to sacrifice a couple of months only to understand the basic of .Net, but to go straight with the solution that is already familiar to them.

3. Technologies

A couple of the technologies are going to be evaluated in the coming months. The technologies have been grouped by tiers as separated in the N-tier architecture (names of people carrying evaluation and testing has been provided in brackets)

3.1. Presentation Layer

Java Server Pages – JSP (Michal Zaremba)

3.2. Application Logic Layer

Servlets (Michal Zaremba)

Enterprise Java Beans – EJB

OWL /RDF / RDFS APIs, Query Interfaces

3.3. Resource Management Layer

Database Systems

Repositories/Ontology-Repositories

CMS Systems

Blogs, Wikis

4. Tools

Tools that are capable to work with the technologies discussed in section 3 are presented below. Again names of people carrying initial implementation and testing of the portal functionality with the given tools have been included in brackets.

JSPs and Servlets container – Tomcat (Michal Zaremba)

Manipulating RDF and reasoning – Jena (Michal Zaremba)

Project build tool – Ant (Michal Zaremba)

Ontology server – Protégé server - (Holger Lausen)

CMS – Open CMS

Blogs – HP Blogs

Database system - Postgresql

EJB container – JBoss

RDF store – Sesame

Project IDE (Integrated Development Environment) – Eclipse and NetBeans

5. References

1. Gustavo Alfonso, Fabio Casati, Harumi Kuno, Vijay Machiraju, “Web Services. Concepts, Architectures and Applications”.
2. Java™ 2 Platform, Enterprise Edition 1.4 (J2EE 1.4) Specification;
<http://www.jcp.org/en/jsr/detail?id=151>