Architecture constraints

1. Database technology: MySQL

2. Programming paradigm: Object-Oriented

3. Programming language: Java

4. Development platform: Java-EE 7

5. System architecture: Java-EE

6. Architectural frameworks: JSF, Java Persistence API

7. Architectural pattern: MVC, Layered (Multi-tiered)

8. Development technologies: EJB, JSP, JPQL, JDBC, Java EE, HTML, AJAX, CSS, JavaScript

9. IDE: Netbeans

10. Build environment: Apache Maven 3

11. Web server software: GlassFish 4.0 server

12. Protocols: HTTP, HTTPS, FTP, JSON, LDAP

13. Client web browser: Internet explorer 9+, Google Chrome 30+, Mozilla

FireFox 20+, Opera, Safari

14. Client device operating systems: Windows, OS X, Linux

15. Source control management: Git

16 Text encoding: UTF-8

System architecture

Layered reference architecture will be used as it is enforced in the JAVA-EE framework

Time Constraint

Given 2 weeks for the functional requirements, 1 week for the architectural requirements, 4 weeks for the implementation of the system and 1 week for testing.

Web services

REST access channel will be used as is more lightweight and doesn’t require a lot of bandwidth, this enhances the goal of one of the core quality requirements which is accessibility to many students, thus they can access via phone device web browsers with easy.

Environmental Constraints

The system will be deployed at the University of Pretoria computer sciences server as an improvement to the current discussion board system.

Authentications

LDAP will be used for login authentication as the system is constraint to the University of Pretoria Students and already the Department have been using LDAP.

Database Technology

MySQL will be used as it enhances scalability , is open source ,thus will not cost university that much and have features for security that includes serialization, encrypting of passwords ,hashing and many more which can be implemented for strengthen security to the system.