**Architecture constraints**

Development environment: Linux

Development platform: Java-EE

Architectural frameworks: Java Server Faces (JSF)

Version control management: Git

# Architectural pattern :Layering(object-oriented design),MVC(Model View Controller)

Development technologies:

* Java Persistence API (JPA)
* Java Persistence query language (JPQL)
* Hypertext Mark-up Language (HTML)
* Asynchronous JavaScript and XML (AJAX)

Architectural constraints

System architecture

Java EE reference architecture used to archive scalability, security and reliability

Frame work

The system will be developed under Java EE frame works which includes JSF, JPA and jPQL with addition of the Ajax frame work for [dynamic web pages](http://en.wikipedia.org/wiki/Dynamic_web_page) on the [client side](http://en.wikipedia.org/wiki/Client_side).

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.

Unit Testing

Maven(software project management) will be used for the system unit testing.

Technologies

Apache Maven