Architecture and Technology:

The greatest stumbling block of the project was the need to familiarise ourselves with the necessary architectures and technologies required to deliver the project to the customers satisfaction. To achieve this we divided them between the group and each did our individual research on the subjects.

JIRA:
Jira is a project management tool which provides visibility of the project to all concerned persons. Unfortunately due to version and resource issues the package we used did not give us the access we needed to JIRA's features to enable us to maximise its use. However it was useful to give us a better grasp of what an individual was doing at any given time. It also provided a useful means of tracking the team's progress and as a result it's potential future velocity.

GIT:
GIT provides a remote repository which allows members of a group to coordinate changes to a document by pulling changes down and pushing their own changes up. This was a very useful tool however it took a while to gain our full confidence and as a result we often renamed files and pushed these new files up alongside the old. As we become more used to its workings we will no doubt use it more effectively.

JPA (Java Persistence API):
The Java Persistence API provides a relational mapping facility for managing relational data in Java applications. We were advised to use JPA as it is the technology that was shown to us in class.
One of the reasons for its use is the support of Transactional integrity, Concurrency and Large data sets, as we will be given around 30000 records of data in the future. It supports queries as well, which is a large part of the requirements.
Through this process we were able to have the entities i.e. tables in our database modelled as classes in Java.

JDBC(Java Database Connectivity):
The JDBC driver provides connectivity between the MySQL database and the java code, allowing communication and transfer of data between the developer and the database via statements embedded in the java code. The largest difficulty was understanding JDBC's basic operation and setting up an initial connection; following that, insertion of data and the querying of that data was relatively straightforward.

Apache Tomcat

Tomcat is an open source web server and servlet container. It is used to execute java servlets and render web pages, including ones that include Java Server Page coding. For our application we used Tomcat 6, executing servlets, HTML pages and JPS pages. These provided the user interface, in which the user can upload excel files to be added to the database and to query that data. The difficulty in using tomcat came from deploying the files to the server and adding all the required libraries to the proper build path.

MySQL:

MySQL is the database management system that we used for the project, in order to add, access, and process the data that is stored in the database. We felt comfortable managing it, as it is a technology that we have encountered previously.

ARCHITECTURE DESIGN