**2.1 The Specifications of lower levels of granularity of the back-end system containing the main functionality of the system**

When we speak of the back-end part of the system, we refer to the system only viewing it from functionality perspective, eliminating the user interface perspective and breaking down the system into much finer parts to assess the individual part that makes the system function and deliver the end results.

Firstly, diving into the system, we will describe the software being used and how the software functions to create the effective and functioning system. Then we will explain how these individual parts interact to allow the system to flow and carry out the instructions.

LDAP Authorization Structure

The LDAP Structure has the purpose of allowing people (students, tutors and lecturers) to access the system and create a specific authorization in a sense. LDAP is a Lightweight Directory Access Protocol that requires a single sign on password and username with the goal to grant access to a user that has such privileges. Users will be added to this system and given a password as well.

MySQL Database Structure

After being authorized to enter the system, we will almost always be directed to the MySQL database where all the core and important data is stored. One single database using MySQL will be used to store the marks of the students and it would be sufficient to use the singleton design pattern to make sure only one of these data structures exist and that no additional and most likely false databases are created.

For the most part of using the database, one would simply use it to view marks. For this the Visitor design pattern can be used to only use a reference of the database than using the actual database. This will keep the internal data structure of the database intact as well as the information in the database.

The structure will be linked together to keep the system functioning correctly and working to an optimal goal of satisfying the client.