# Architecture requirements

## Quality requirements

Performance

* The system must retrieve and update information in real time.
* The mobile application is lightweight and will require minimal hardware resources paired to an android operating system, it will not be dependent on using a newer, powerful device

Reliability

* If the system goes off-line or the mobile device cannot maintain a connection after a marking sheet has been opened, marking must still be possible, all changes will be stored locally on the device with the use of time stamps and later synced when a connection is made.
* The system will not be functional whilst the server is down for maintenance.

Scalability

* The system must scale in terms of the number of clients, both web and mobile application, concurrently using the system and should cater for all students and staff.
* Performance, reliability, auditability and usability must not be dependent on the number of users on the system.

Security

* The system’s functions will be limited to respected classes of users, with authentication by means of a username and password.
* Without the system approving credentials, the user will not be able to access delicate functions of the system such as a marking sheet or an audit log.

Flexibility

* The system must be accessible from either a web or mobile application interface.
* The web interface must not be dependent on the type of browser or operating system for full functionality.

Maintainability

* The user must be able to effortlessly upgrade their mobile application to a newer version from the application itself.
* The efficiency of the system must be testable with simulations.

Auditability / Monitorability

* All modifications of data on the system must be recorded in an audit log.
* Nobody has the authority to modify the audit logs.
* Only the relevant HOD has the authority to access the audit log if needed.

Integrability

* Each of the layers must integrate seamlessly with each other and not be dependent on regular human attention to function.

Cost

* The cost of the mobile application and using the web interface must be free.

Usability

* Both the web and mobile application interfaces must be simple, straight forward and self explanatory with on screen guidance.