## **High-level Architecture**

* Provide a diagram of the major components of your system ✔
* Describe each of the major components given in the diagram ✔
* Consider the various architectural styles. Do any of them apply? Make sure to explain the reasoning of your choice of architectural style(s) within the context of the project ✔
* Provide a diagram of the system interfaces. Describe each of the interfaces of your system in detail.
* How will the major components interact with each other?
* Discuss your team's evaluation of the major design issues: reliability, reusability, maintainability, testability, performance, portability, security, and safety. ✔

Reliability is the probability of the software executing without failure for a specific period of time. Reliability issues can occur because of improper inputs, errors in the code itself, components that are not available when needed, and hardware failures.

Reusability is the indicator of the relative effort required to convert a software component to other applications. Reusability issues can occur due to modularity, documentation, the environment, and capability.

Maintainability is the ease at which a software’s code is understood, repaired, or enhanced. Maintainability issues can occur in the system due to incorrect documentation and no refactoring.

Testability is the ease at which a system or system unit can be tested and verified. The system can experience testability issues due to the requirements, subsystem, or other components not being verified as acceptable or not resulting in many unresolved faults and malfunctions.

Performance represents the responsiveness of the system to various inquiries and actions. For this system, performance would involve the response time for the queries to display results. Additionally, the system performance aspects include data capacity (Maximum amount of data stored in a database), dynamic capacity (Maximum number of concurrent users of the system), and latency (the amount of time it takes for the data to be processed). Performance issues the system can experience are imprecise response time and latency.

Portability is the measure of effort needed to migrate software from one operating environment to another. Portability issues can occur due to what portions of the product are movable and localized as well as what platforms need support which affects the environment.

Security deals with blocking unauthorized access to system functions or data, ensuring that the software is protected from malware attacks. Security issues can arise due to the internet opening issues like malware, phishing, and denial of service.

Safety deals with the need to prevent a system from doing any injury to people or damage to the property. Safety issues can occur due to the system not following business rules.

* Which issues are relevant to your project? ✔
  + Reliability: The system must be able to run with little to no failure as it is a system used by countless personnel (employees and managers) and must be able to deal with risk management. For instance, minimizing data loss in case of failure and limited communication occurring in the workplace due to workload.
  + Performance: The system must be able to meet requirements in a timely fashion. The system response time should not take longer than 10 seconds. People using this system are busy people and they can get frustrated.
  + Maintainability: The system should be able to be understood, enhanced, and repaired as it is used to help streamline the functions.
  + Security: The system must be able to protect against unauthorized access to the application and its data. For instance, the system should not compromise or hinder the security of the existing authentication portal system. Security is important due to the several servers and databases.
* What technical difficulties do you expect to encounter? How will you solve them?

The technical difficulties we expect to encounter . For instance, one technical issue is that .

* ~~Your architecture should verify the requirements specification document.~~