# Software Requirements Specification (SRS)

## **Functional Requirements**

These define the core functionalities the system must provide.

|  |  |  |
| --- | --- | --- |
|  | **Requirement** | **Description** |
|  | User Authentication | Users (faculty, students) must log in with email & password. |
|  | Role-Based Access | Faculty and students should have different dashboards with specific functionalities. |
|  | Faculty Dashboard | Faculty should be able to see their assigned classes and mark attendance. |
|  | Student Dashboard | Students should be able to view their attendance history and percentage. |
|  | Attendance Marking | Faculty should be able to mark students as present, absent, or late for each class. |
|  | Attendance Editing | The faculty should be able to edit attendance records within a specified timeframe. |
|  | Attendance Notifications | Students should receive alerts if attendance falls below a certain threshold. |
|  | Attendance Reports | Students should be able to download attendance reports. |
|  | Logout | Users should be able to log out securely. |
|  | Error Handling | The system should handle invalid inputs and errors properly. |
|  |  |  |

## **Non-Functional Requirements (NFRs)**

These define system quality, performance, security, and external dependencies.

### A. Product Requirements

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Requirement** | **Description** | |
|  | Performance | | The system should respond within 2 seconds for login and attendance actions. |
|  |  | |  |
|  | Security | | User data must be encrypted, and authentication should use JWT tokens. |
|  | Availability | | The system should be available 24/7 with 99.9% uptime. |
|  | Usability | | The system should have a user-friendly UI with clear navigation. |

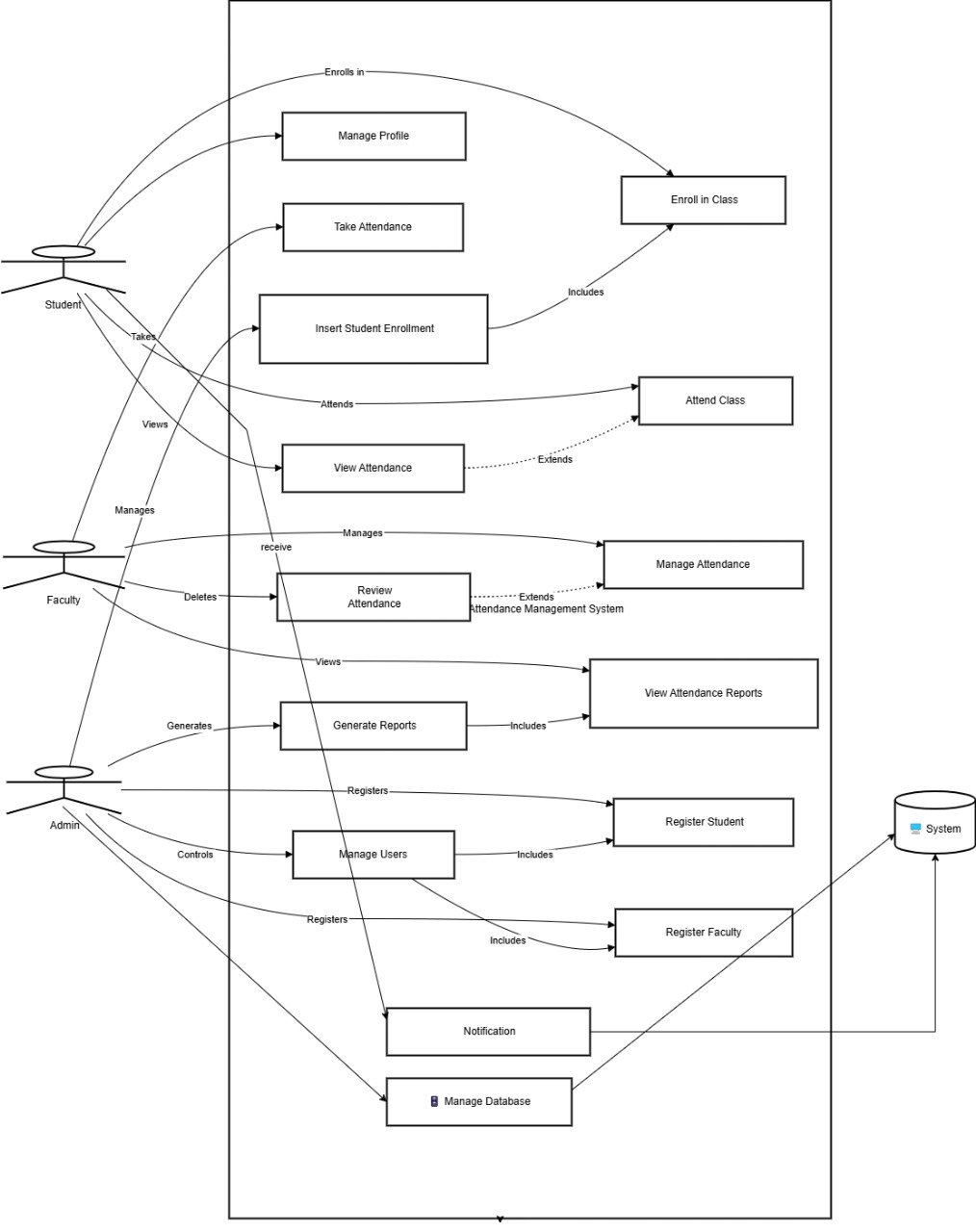
### B. Organizational Requirements

|  |  |  |
| --- | --- | --- |
|  | **Requirement** | **Description** |
|  | Development Framework | The system should be built using (MySQL, Express.js, React.js, Node.js). |
|  | Hosting | The system should be deployed on AWS, Firebase |
|  |  |  |

### C. External Requirements

|  |  |  |
| --- | --- | --- |
|  | **Requirement** | **Description** |
|  | Third-Party APIs | If real-time notifications are needed, Firebase/SendGrid should be used. |
|  | Data Backup | Attendance records should be backed up daily. |
|  | Browser Support | The system must work on Chrome, Firefox, Edge, and Safari. |

## **Use Case Diagram**



## **User Story**

 As a Student, I want to enrol in a class, so that I can attend lectures and be included in the attendance records.

 As a Student, I want to view my attendance records, so that I can track my attendance performance.

 As a Student, I want to attend a class, so that my presence is recorded in the system.

 As a Faculty Member, I want to take attendance, so that I can track which students are present or absent.

 As a Faculty Member, I want to manage student attendance, so that I can make corrections in case of errors or absences.

 As a Faculty Member, I want to delete incorrect attendance records, so that the system maintains accurate data.

 As an Admin, I want to register students in the system, so that they can be assigned to classes and have attendance recorded.

 As an Admin, I want to register faculty members, so that they can take attendance and mnage student records.

 As an Admin, I want to manage users, so that I can control access and ensure the right permissions are assigned.

 As an Admin, I want to generate attendance reports, so that I can analyze student performance and faculty efficiency.

 As a System, I want to store attendance data, so that faculty and students can retrieve attendance records when needed.

 As a System, I want to send attendance notifications, so that students are aware of their attendance status.

 As a User, I want to sign up, so that I can access the system with a unique account.

 As a User, I want to log in, so that I can securely access my account.

 As a User, I want to log out, so that I can securely end my session.

 As a User, I want to change my password, so that I can maintain account security.

## **Pre and Post Conditions**

**Take Attendance**

**Preconditions:**

* The faculty must be logged into the system.
* The class session must be active.
* The enrolled student list must be available.

**Postconditions:**

* Attendance for the session is successfully recorded.
* The system updates attendance records for each student.
* Notifications may be sent to absent students.

**Manage Attendance**

**Preconditions:**

* The faculty must be logged in.
* Attendance records must exist.
* The faculty must have editing permissions.

**Postconditions:**

* Attendance records may be updated, corrected, or removed.
* The system saves changes and maintains a history of modifications.

**Generate Reports**

**Preconditions:**

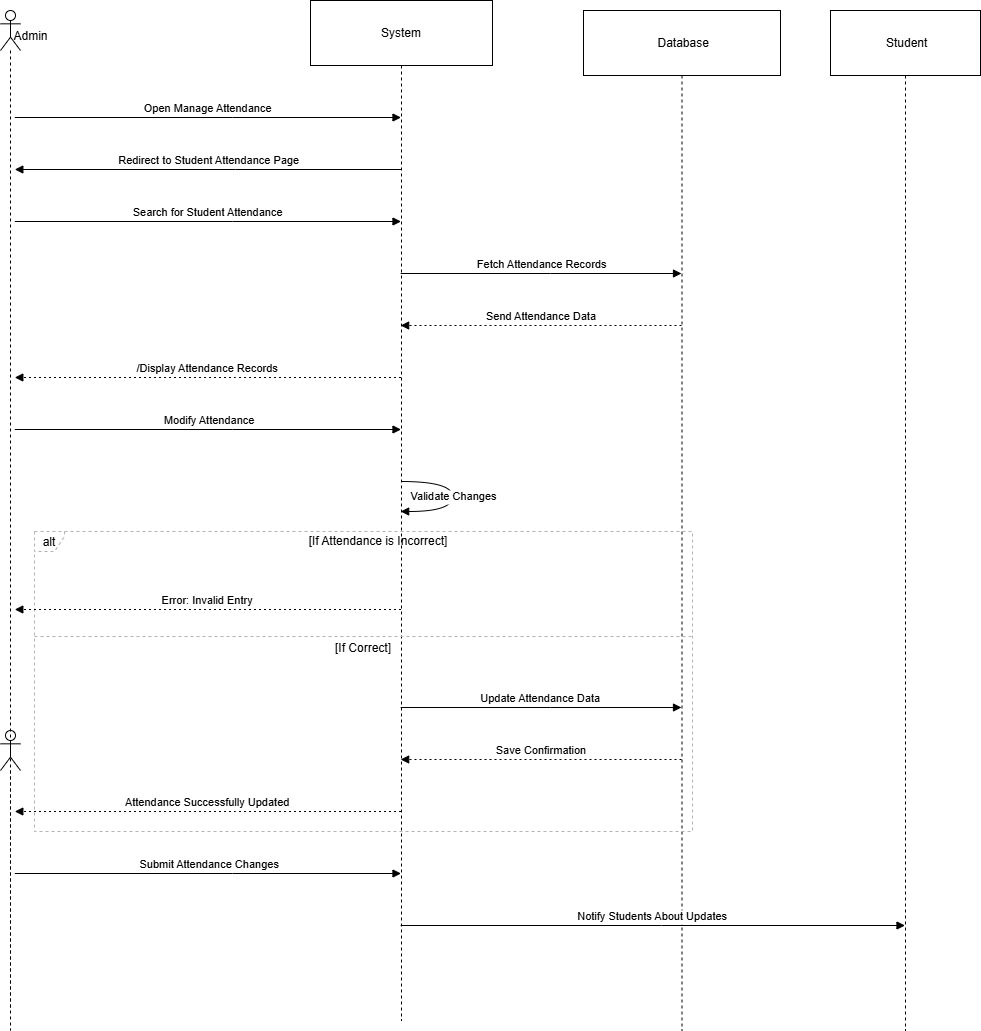
* The admin or faculty must be logged in.
* Attendance data must be available in the system.

**Postconditions:**

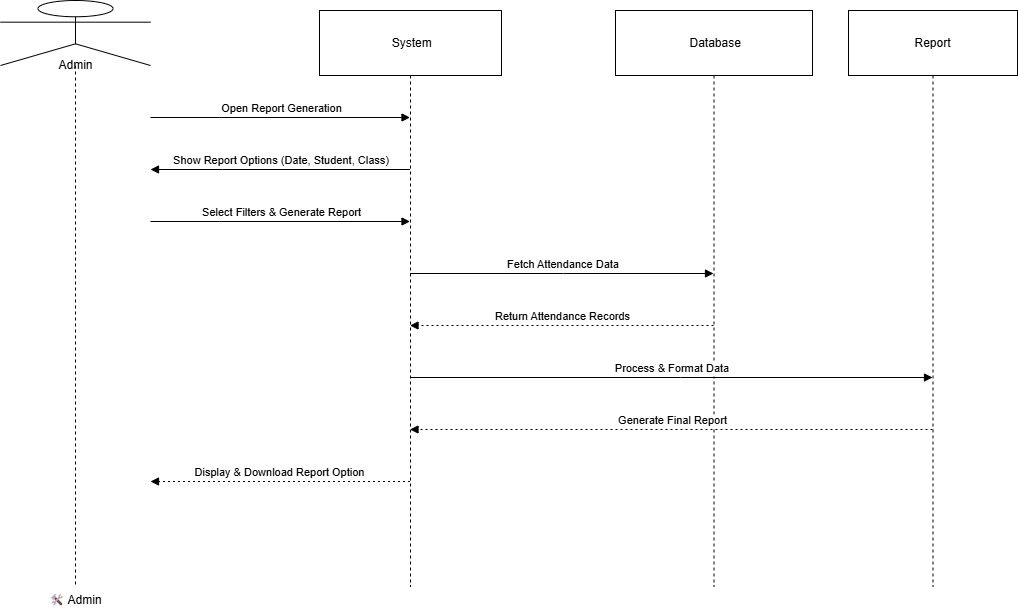
* A report is generated successfully.
* The report is available for download or viewing.
* The system logs the report generation request for auditing purposes.

## **Sequence Diagram**

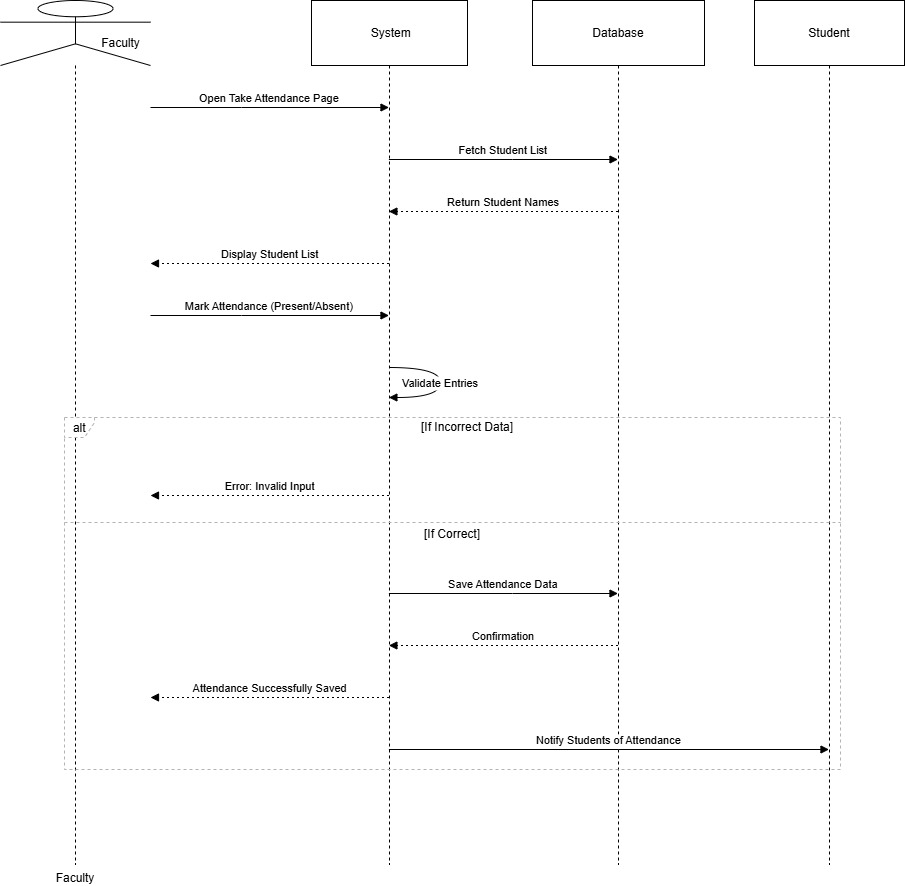
## **Manage Attendance**



## **Report Generation**



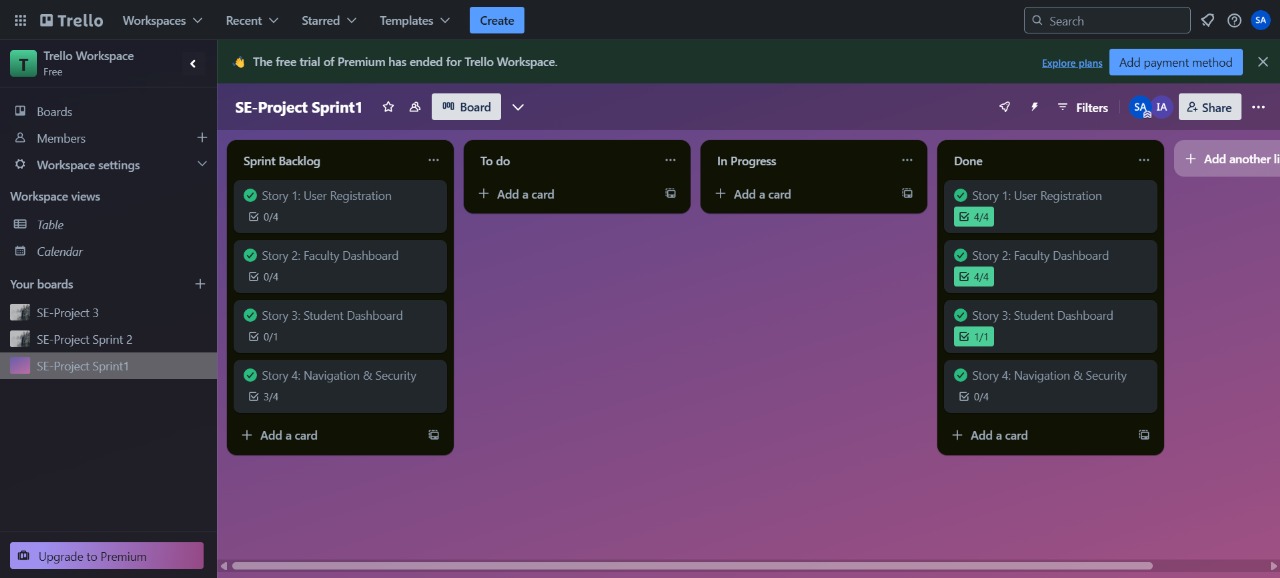
## **3. Take Attendance**



## **Class Diagram**

## **Trello Board**

## Sprint 1



## Sprint 2

