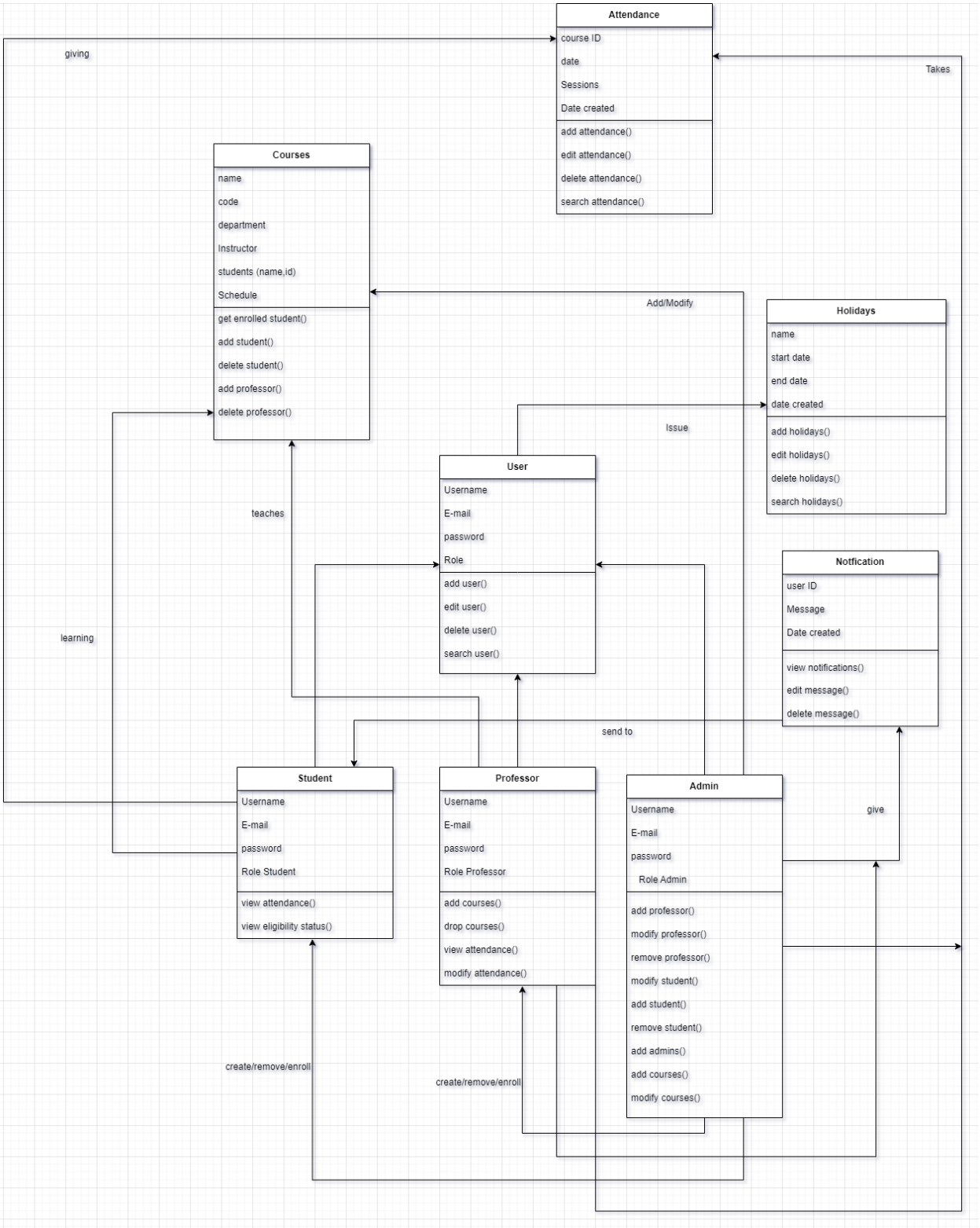
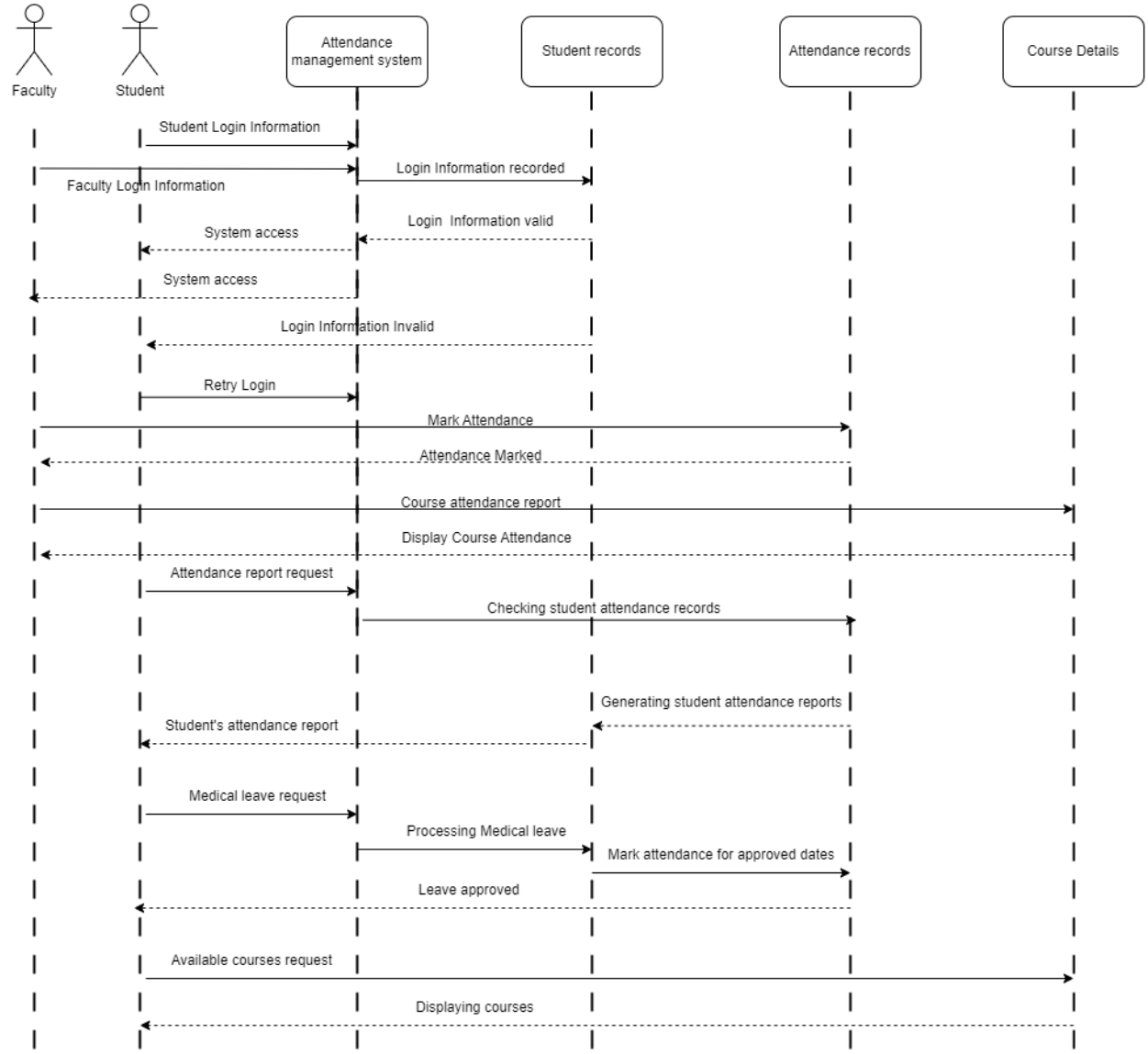
IT-314 - Lab-6

Group - 10
Project ID - 82
Project name - Attendance Management System

Class Diagram:



Sequence


Faculty
Student
Attendance management system
Student records
Attendance records
Course Details
Student Login Information
Faculty Login Information
Login Information recorded
Login Information valid
System access
System access
Login Information Invalid
Retry Login
Mark Attendance
Attendance Marked
Course attendance report
Display Course Attendance
Attendance report request
Checking student attendance records
Generating student attendance reports
Student's attendance report
Medical leave request
Processing Medical leave
Mark attendance for approved dates
Leave approved
Available courses request
Displaying courses

Design Goals:

The design goals for attendance management system are as follows:

1. Accuracy: The attendance management system should be accurate and reliable, ensuring that attendance data is captured correctly and in a timely manner. This is critical for performance analysis, and compliance purposes.

2. Accessibility: The attendance management system should be accessible to authorized personnel and provide a user-friendly interface. This will ensure that attendance data is easily accessible and can be used effectively to make decisions.

3. Scalability: The attendance management system should be scalable to accommodate changes in the size of the organization or workforce. It should be able to handle an increasing number of employees and attendance data.

4. Integration: The attendance management system should be able to integrate with other systems, such as payroll, human resources, and time-tracking systems, to streamline processes and reduce the workload on employees.

5. Security: The attendance management system should have appropriate security measures in place to protect sensitive employee data, including access control, encryption, and data backup.

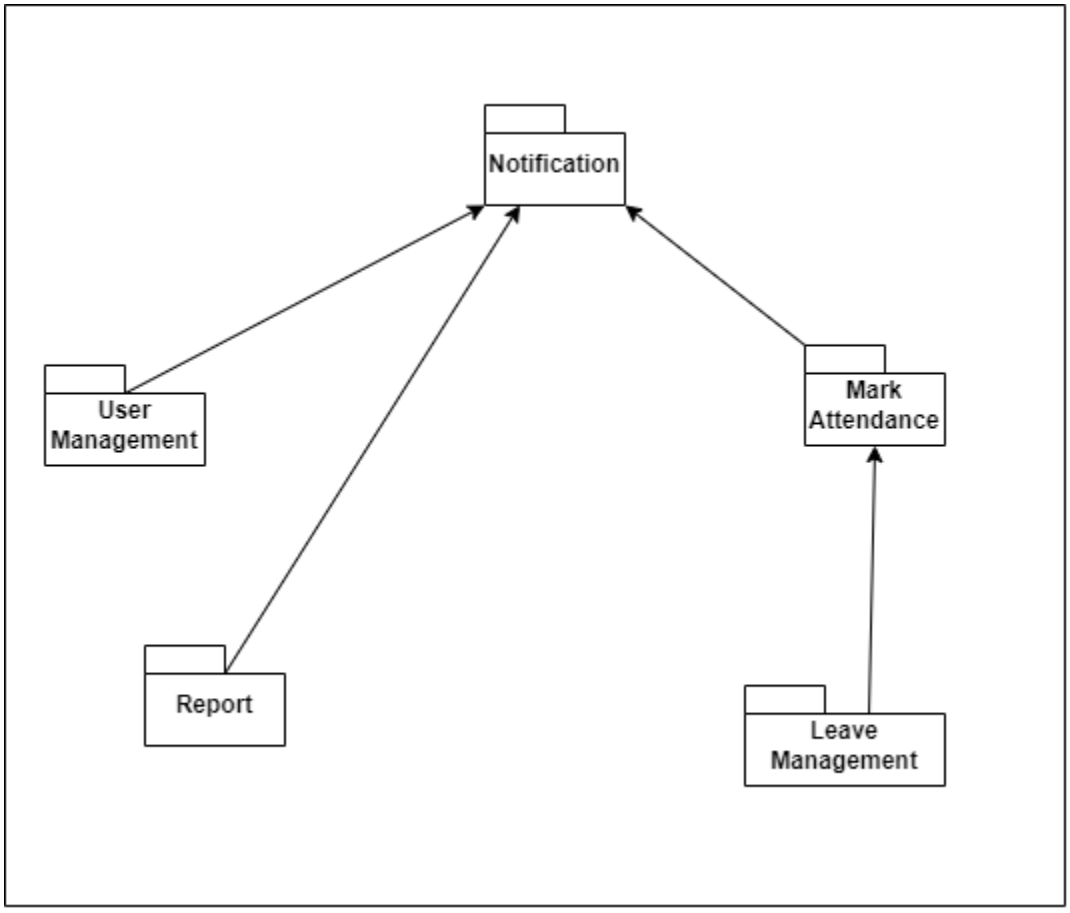
6. Customization: The attendance management system should be customizable to meet the specific needs of the organization. This could include custom reports, data fields, and workflows.

7. Cost-effectiveness: The attendance management system should provide value for money, taking into consideration the total cost of ownership, including implementation, training, maintenance, and support.

High Level design

The **Model-View-Template (MVT)** architecture is a variant of the Model-View-Controller (MVC) architecture, used in web application development. In the MVT architecture, the application's data model, user interface, and business logic are separated into three distinct components: the Model, the View, and the Template.
This architecture is chosen for our project as it is also the architecture which django follows and it is our choice for the project backend. This architecture is considered good because the components Model, View and Template are loosely coupled and it simplifies both large and small scale applications.

Subsystem Decomposition:



The above are the 5 decided subsystems for the main system. This contains Notification subsystem, User management subsystem, Attendance Handling subsystem, Report Generation subsystem and Leave Management subsystem.

Notification subsystem: This takes care of sending the notifications required to user, admin or faculty based on requests by other modules.

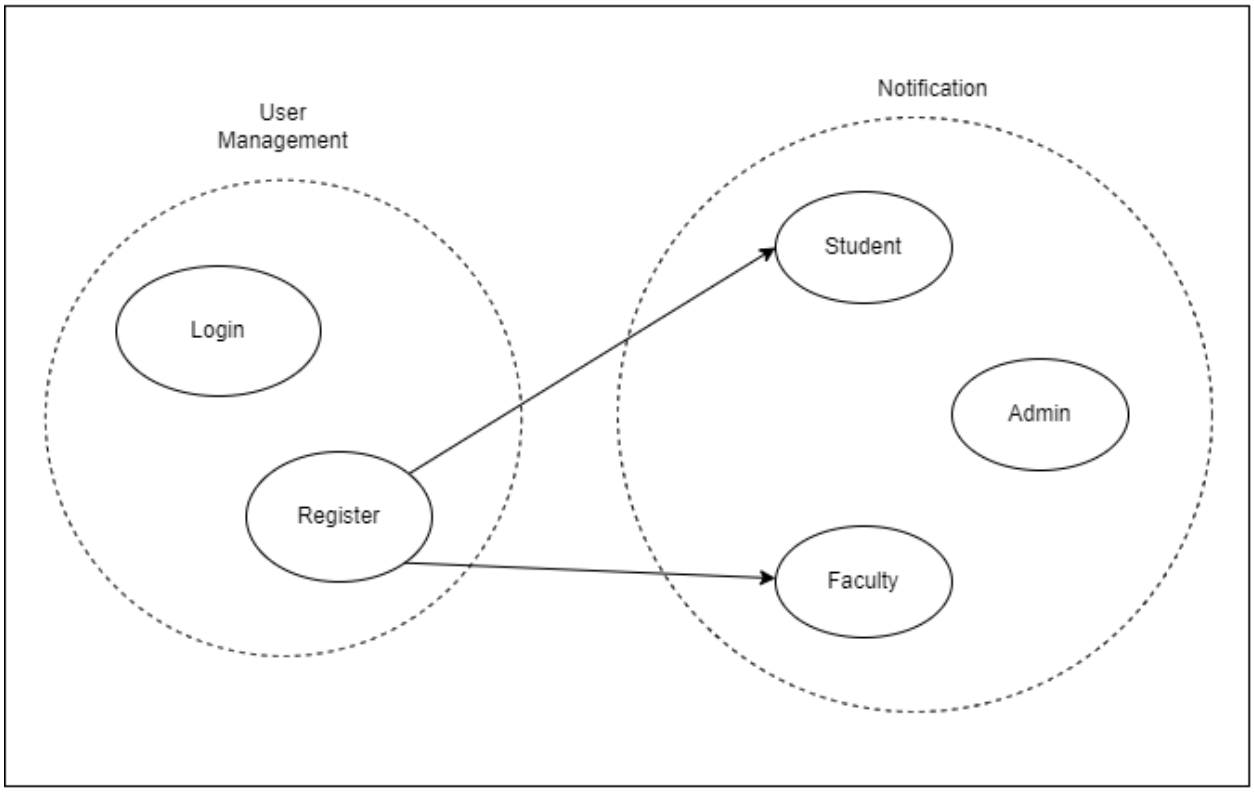
User Management subsystem: This will take care of handling data for student and faculty. It will have functions to login, register and authentication functions.

Report Generation subsystem: This will extract data from attendance tables to show reports to student and faculty when asked. It also notifies students for lesser attendance.

Leave Management subsystem: This will handle data for student leaves. It helps apply leave for student to faculty and when approved the attendance is marked automatically for that time range.

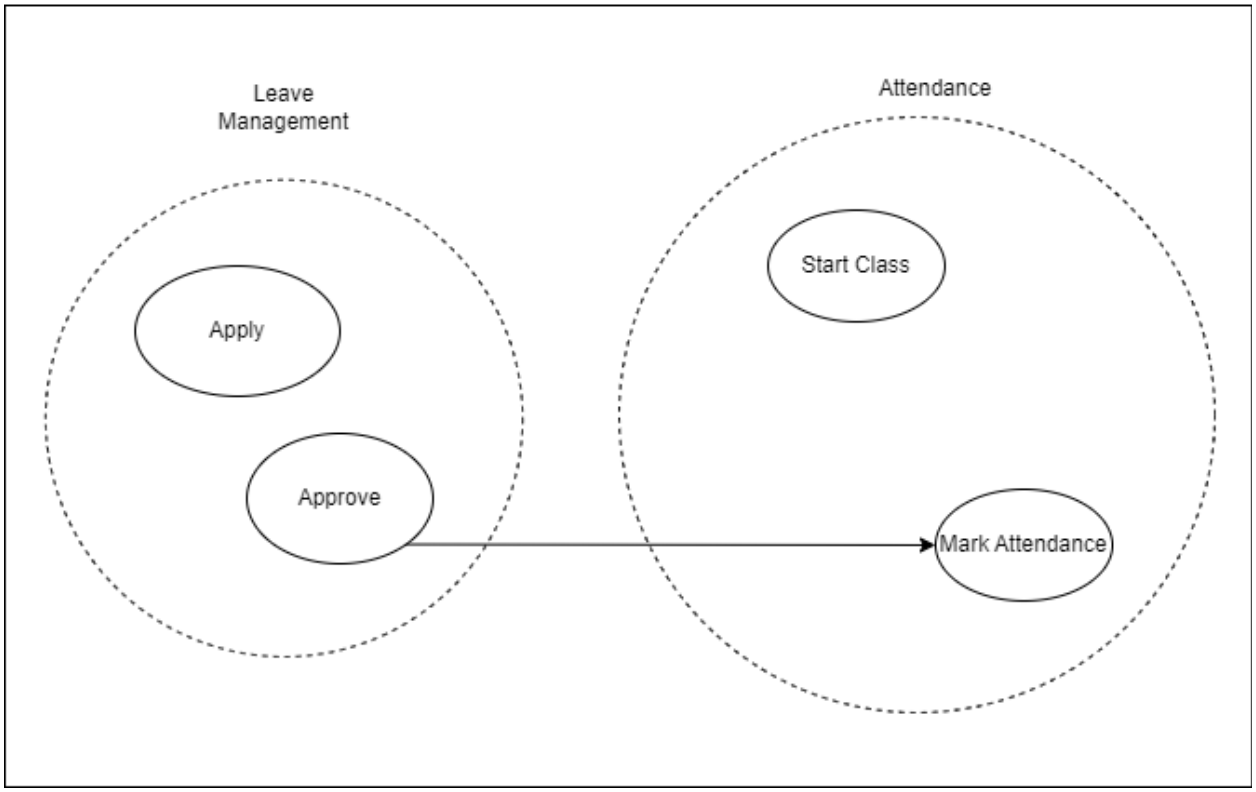
Mark Attendance subsystem: This subsystem will help faculty to start the class and mark attendance manually.

Coupling between user management and notification:



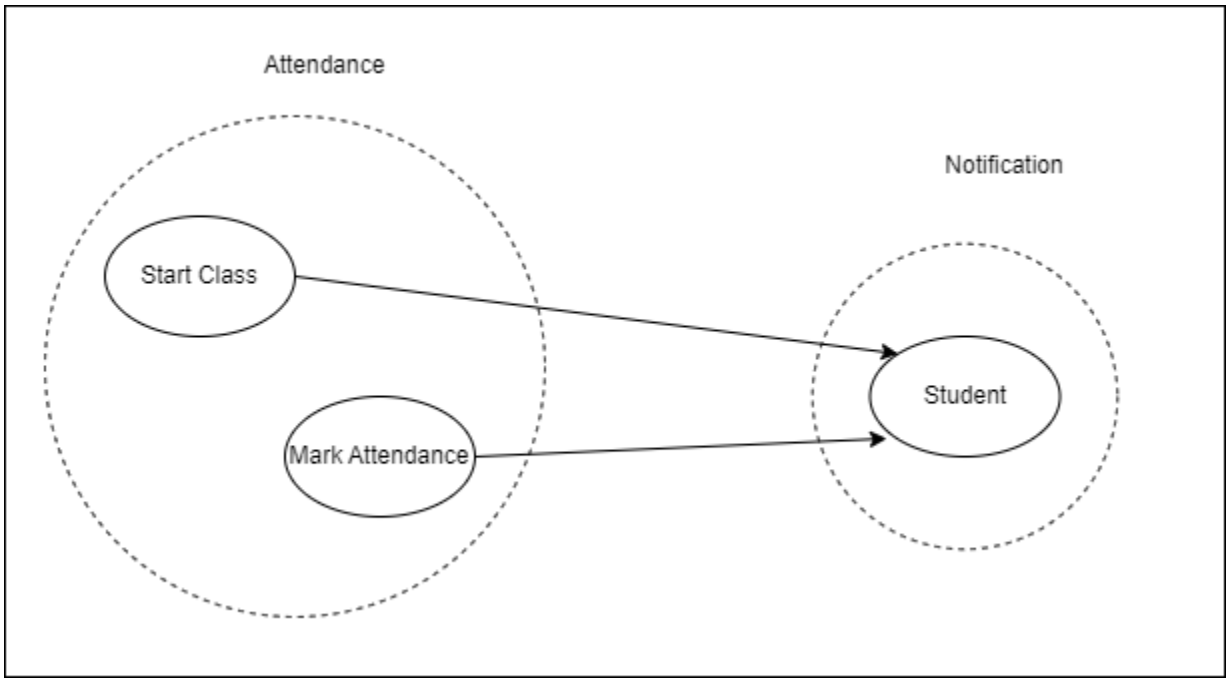
Notification is sent to faculty and student when registration is done by admin.

Coupling between leave management and attendance:



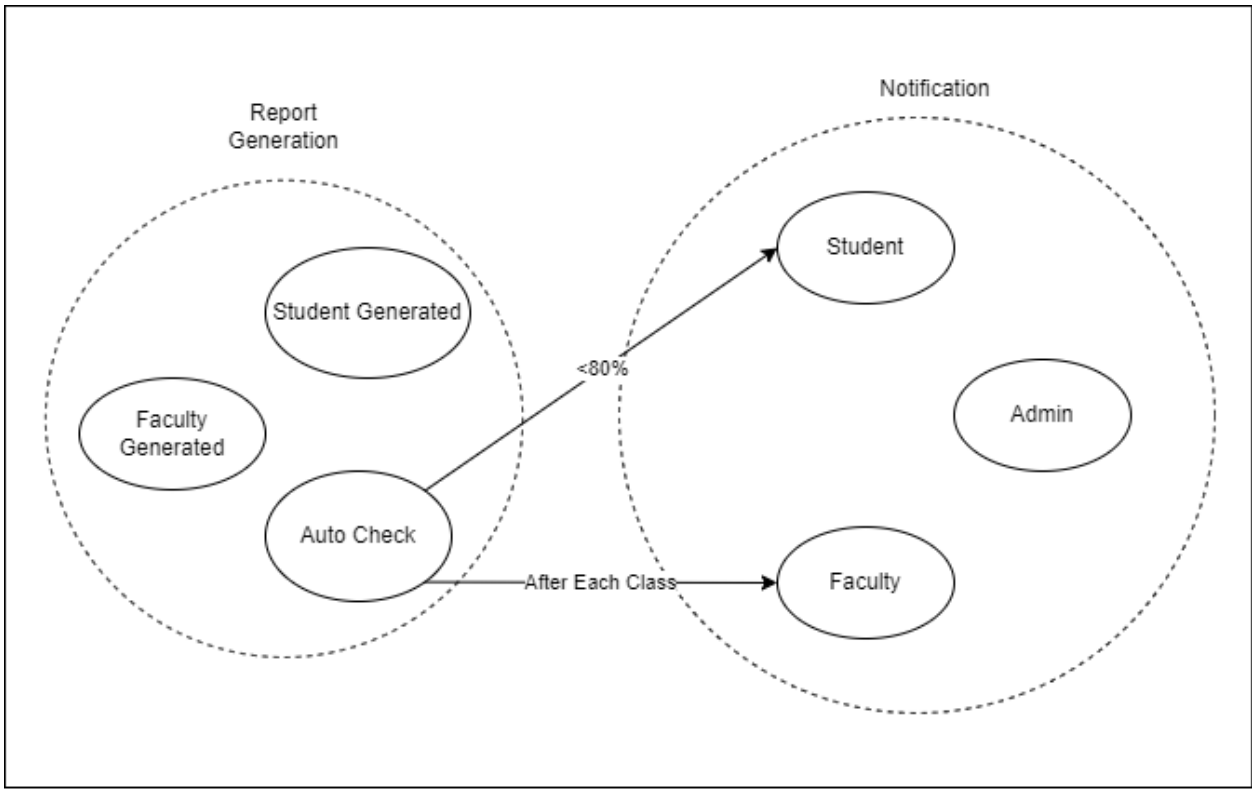
Attendance is automatically marked for student when the leave is approved.

Coupling between Attendance and Notification:



Notification is sent to student when the class is started for specific course and student’s attendance is marked

Coupling between Report Generation and Notification:



Report is automatically generated in some duration to check if the student's attendance is getting lower by 80% or also if the student is absent is checked after each class.