

1. Introduction

The College Management System is a centralized software solution designed to automate and streamline the academic and administrative processes within the college. It serves as a digital bridge connecting the three main pillars of the educational process: Students, Instructors, and Administrators. By replacing manual record-keeping with an efficient digital system, it ensures data consistency, accessibility, and smooth operation of academic activities.

2. Objectives

The primary objectives of the system are:

- **Data Centralization:** To maintain a unified database for Students, Instructors, Courses, and Departments.
- **Efficiency:** To facilitate core processes such as course registration, grade uploading, and material distribution.
- **Role-Based Access:** To ensure that each user (Admin, Instructor, Student) has access only to the functionalities relevant to their role.
- **Academic Tracking:** To allow students to track their GPA and grades easily, and enable instructors to manage their course schedules effectively.

3. Functional Requirements

The system enables users to perform the following functions based on the Class Diagram design:

- **User Authentication:** All users must log in securely using their credentials.
- **Administration:** The Admin can manage the system by adding new students, courses, and instructors.
- **Course Management:** Instructors can manage courses, upload materials, and upload student grades.
- **Student Services:** Students can register for available courses, download study materials, and view their grades and GPA.
- **Department Management:** The system organizes students, instructors, and courses under specific departments.

4. Non-Functional Requirements

- **Security:** Passwords and sensitive data must be protected, and unauthorized access must be prevented via the login mechanism.
- **Scalability:** The system structure (Classes and Relations) is designed to support a growing number of students and courses without structural changes.
- **Usability:** The system interfaces should be intuitive for all user types.
- **Availability:** The system should be accessible to students and instructors at all times for critical tasks like material downloading and grade checking.