

Business requirements

Key Functionalities

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1. Department Management

- Track details of each department, including the head of the department and contact information.
- Link departments to , professors, students, and courses.

Each department have multiple professors and courses

There is no department with no professors or courses or students

2. Professor Management

- Maintain records for professors, including names, and departments they belong to.
- Associate professors with courses they teach.
- Professors can teach multiple courses

3. Student Management

- Record student details, such as names, contact information, and enrollment status.
- Link students to their respective departments.
- Track students' academic progress through GPA and grades.

4. Course Management

- Store course details, including course codes, titles, descriptions, credits, and prerequisites.
- Associate courses with the departments that offer them.

1. Student Table

Attributes:

- **StudentID (PK):** A unique identifier assigned to each student (e.g., 1001, 1002).

- **Name:** The full name of the student (e.g., John Doe).
 - **DateOfBirth:** The student's birthdate (e.g., 2002-05-15).
 - **Address:** The residential address of the student (e.g., "123 Elm Street, Springfield").
 - **Email:** The student's official email address (e.g., john.doe@university.edu).
 - **PhoneNumber:** The student's phone number (e.g., +123456789).
 - **Status:** The current status of the student, such as "Active," "Graduated," or "Suspended."
 - Credit hours
 - GPA
 - Semester : derived from credit
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2. Professors Table

Attributes:

- **FacultyID (PK):** A unique identifier for each faculty member (e.g., F001, F002).
 - **Name:** The full name of the faculty member (e.g., Dr. Emily Brown).
 - **Email:** The faculty's official email address (e.g., emily.brown@university.edu).
 - **PhoneNumber:** The faculty member's contact number (e.g., +987654321).
 - **DepartmentID (FK):** A reference to the department the faculty belongs to (e.g., "D001" for Computer Science).
 - **Qualification:** The highest qualification achieved by the faculty member (e.g., "PhD in Computer Science").
 - **Position:** The academic or administrative role of the faculty member (e.g., "Professor," "Lecturer," or "Head of Department").
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3. Courses Table

Attributes:

- **CourseID (PK):** A unique identifier for each course (e.g., C001, C002).
- **CourseCode:** A standardized code for the course (e.g., "CS101" for Introduction to Programming).
- **Title:** The name of the course (e.g., "Introduction to Programming").
- **Credits:** The number of credit hours the course carries (e.g., 3).

- **Prerequisites:** Any courses that must be completed before taking this course (e.g., "CS100").
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4. Departments Table

Attributes:

- **DepartmentID (PK):** A unique identifier for each department (e.g., D001 for Computer Science).
- **Name:** The name of the department (e.g., "Computer Science").
- **HeadOfDepartment:** The faculty member serving as the head of the department (e.g., "Dr. Emily Brown").
- **ContactDetails:** General contact information for the department (e.g., "csdept@university.edu").

5- College Table

Attributes:

1. **CollegeID (PK):**
 - A unique identifier for each college (e.g., C001, C002).
 2. **Name:**
 - The name of the college (e.g., "College of Engineering").
 3. **Dean:**
 - The name or ID of the dean who oversees the college (e.g., "Dr. Sarah Ahmed").
 4. **ContactDetails:**
 - Contact information for the college, such as email and phone number (e.g., engineering@university.edu, +123456789).
 5. **Location:**
 - The physical location of the college within the university campus (e.g., "Building A, Main Campus").
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Constraints and Policies

- **Students cannot register for courses that have unmet prerequisites.**
- **Faculty members cannot teach more than a set number of courses per semester (4).**
- **Course grades must follow the university's grading scale (e.g., A, B, C, etc.).**
- **Each department can have only one head at any time.**
- **Each student could register 25 hours per semester**
- **A student can only enroll in courses offered by their department.**
- **Colleges must have at least one department**
- **Students must register at least 15 hours**
- **Courses may be taught in many departments**
- **Courses could be taught by multiple professors**