FIRST SUBMISSION
CSE - 202 DBMS PROJECT

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Project Scope

The project focuses on creating a **Grade Prediction Model** designed to dynamically estimate a student's CGPA throughout the semester. This system will assist students in tracking their academic progress and planning effectively to achieve their educational goals. The scope includes managing, analysing, and presenting academic evaluation data.

Data to be stored

1. Student Information:
   - Roll Number
   - Name
   - Batch
   - Program
   - Branch
   - Current CGPA
   - Predicted SGPA
   - Predicted Grades
   - Courses in this Semester
   - TA information

2. Instructor Information:
   - Instructor ID
   - Name
   - Department
   - Courses

3. Course and Evaluation Data:

- Course Code
- Course Name
- Instructor
- Teaching Assistants
- Capacity
- Eligibility
- Evaluation types applicable
- Evaluation dates (Including deadlines and assigning dates)
- Grading Scheme

3. Calendar:
    - Evaluation dates (Including deadlines and assigning dates)

Technical Requirements

Frameworks and Technologies

Frontend: React for building an interactive and user-friendly interface.

Backend: Flask to manage the backend logic, APIs, and server-side functionalities.

Database: MySQL to store and manage all data related to students, courses, evaluations, and grades.

Data Storage

Database Design:

- Tables for students, courses, evaluations, grades, and schedules.
- Relationship management between tables to ensure data consistency.

Access Constraints

- Student: Access to personal data, course schedules, and evaluation details.
- Instructors: Access to course-specific data and the ability to update evaluation scores.
- Admins: Full control to manage users, courses, and system configuration.

Functional Requirements

Student Interface

Dashboard:

- A personalised overview displaying the following:
    - Current CGPA.
    - Predicted SGPA based on ongoing evaluations.
    - Grade predictions for individual courses.
    - Alerts for upcoming evaluations and deadlines.
    - Recommendations for courses needing more focus.
- Visual representation of grades using graphs or charts.

Performance Statistics:

- Graphical trends of CGPA/SGPA over previous semesters.
- Course-wise performance breakdown.
- Comparisons with class averages (optional, for motivation).

Calendar View:

- Integration of evaluation dates, deadlines, and class schedules.
- Clickable events provide detailed evaluation information (e.g., type, weightage, and submission links).
- Colour-coded indicators for:
    - Submitted evaluations.
    - Upcoming deadlines.
    - Completed evaluations.

Grade Projection Tool:

- Input fields for hypothetical scores to simulate the impact on final grades.
- Calculation of marks required for target grades.

Instructor Interface

Dashboard:

- Overview of all assigned courses.

- Recent activities like updated evaluations or grade distributions.

Course Management:

- View the enrolled students' details (Roll Number, Name, Batch).
- Upload evaluation results using bulk CSV uploads or manual entry.
- Edit evaluation weightage or deadlines if necessary (with admin approval).

Evaluation Management:

- Create, modify, and delete evaluations (assignments, quizzes, etc.).
- View grade distribution for each evaluation.
- Update and finalise grades for evaluations.

Analytics:

- Real-time analysis of student performance across evaluations.
- Identify at-risk students who might need additional support.
- Export course-specific reports for admin review.

TA Interface

Access Control:

- Restricted to the courses they are assigned to assist.

Course Assistance:

- View the list of students enrolled in the assigned course(s).
- View and update attendance records.
- Provide remarks or comments on student performance for evaluations.

Evaluation Assistance:

- Assist in grading assignments or quizzes as authorised by the instructor.
- Bulk upload of grades for specific evaluations (only if authorised).

Student Support:

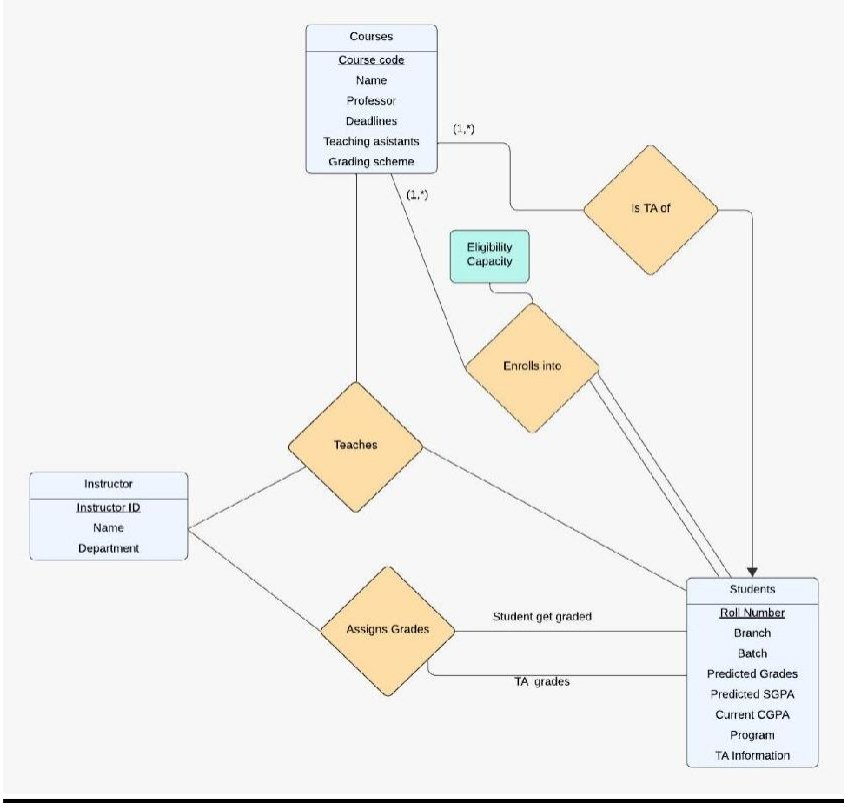
- Address student queries related to course materials, evaluations, or grades.
- View specific student performance in assigned courses and suggest improvements.

Data Processing

Backend logic for:

- Dynamic grade projection based on completed evaluations.
- Required marks calculation for specific target grades.
- Automatic updates to predictions when new scores are added.
- Course Eligibility.

ER MODEL



THANK YOU

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