DATABASE MANAGEMENT SYSTEM
UE21CS351A
MINIPROJECT

CAPSTONE MANAGEMENT SYSTEM

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USER REQUIREMENT SPECIFICATION

The Capstone Management System is a comprehensive software solution designed to facilitate the planning, tracking, assessment, and administration of capstone projects within an educational institution. Capstone projects often serve as a culminating experience for students, where they apply their knowledge and skills to solve real-world problems or complete a substantial project.

In this database we keep track of the students' and mentors' personal as well as academic profiles , maintenance of capstone teams' details including constraints on team size, CGPA and mentor allocation. The projects can be efficiently monitored and assessed as we keep track of their progress status. The panel of judges for the review are meticulously maintained to make sure there are no discrepancies during assessments. The judges present in the specific panel review the teams' projects and provide insightful feedback on a scheduled day and location. Each review is recorded and stored for documentation purposes.

There are many ways in which this database management system helps the various users associated with it, some of them are:
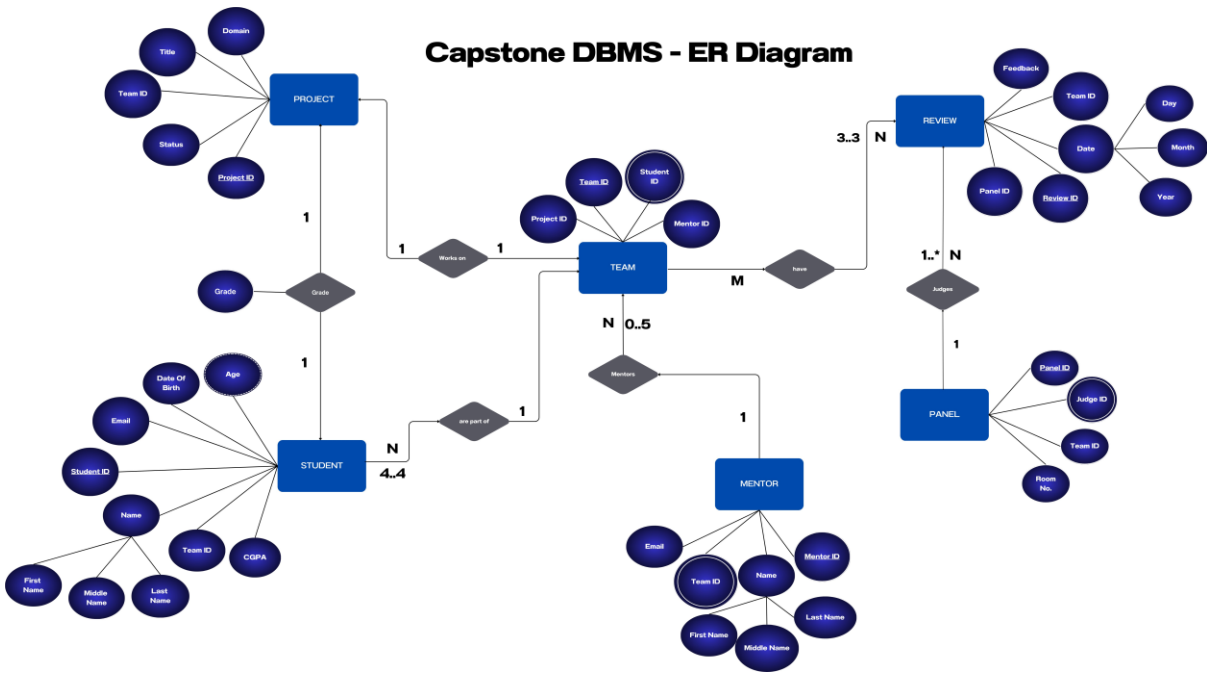
- Efficiently plan, assign, and manage capstone projects, reducing administrative overhead.
- Centralized repository for project documentation, proposals, and progress tracking.
- Reduces manual administrative tasks and paperwork associated with capstone project management.
- Frees up faculty and staff time for more valuable interactions with students.
- Simplifies the creation and management of review panels, including panel member assignments and scheduling.
- Ensures a systematic and organized review process

The system responds quickly to user actions, even during peak usage periods. It handles a large number of concurrent users and projects. Data is stored securely and integrity is maintained, user authentication and authorization is robust. The user interface is intuitive and user-friendly, the system is scalable and can accommodate the growth of capstone programs. The system is readily available and reliable, with minimal downtime. Regular data backups and disaster recovery procedures are in place. The system is compatible on various web browsers and mobile devices. It will support multiple operating systems. The system will prevent data duplication and inconsistencies are avoided. Procedures for handling system updates, bug fixes, and feature enhancements should be in place.

Future scope of this project involves:

- Notification features for important dates, meetings, and project updates such as emails or alerts being broadcasted to all the entities of the database
- Additional data security can be provided through user authentication, role-based access control (user classes such as administrative view, student view and the mentor view along with additional access for feedback and grade submission for faculty who are part of the review panel) and data encryption.
- Provide access to students to monitor their project's status and receive timely feedback.

Capstone DBMS - ER Diagram

PROJECT
- Domain
- Title
- Team ID
- Status
- Project ID

TEAM
- Team ID
- Student ID
- Project ID
- Mentor ID

REVIEW
- Feedback
- Team ID
- Date
- Day
- Month
- Year
- Panel ID
- Review ID

STUDENT
- Date Of Birth
- Age
- Email
- Student ID
- Name
- First Name
- Middle Name
- Last Name
- Team ID
- CGPA

MENTOR
- Email
- Team ID
- Name
- Mentor ID
- First Name
- Middle Name
- Last Name

PANEL
- Panel ID
- Judge ID
- Team ID
- Room No.

Grade — Grade

Works on: PROJECT 1 — 1 TEAM

have: TEAM M — 3..3 N REVIEW

PROJECT 1 — 1 Grade

Grade 1 — STUDENT

are part of: STUDENT N 4..4 — 1

Mentors: TEAM N 0..5 — 1 MENTOR

Judges: REVIEW 1..* N — 1 PANEL

Capstone DBMS - Relational Schema

Project

Project ID	Team ID	Status	Title	Domain

Grades

Student ID	Project ID	Grade

Student

Student ID	Team ID	First Name	Middle Name	Last Name	Email	DoB	CGPA

Team

Team ID	Student ID	Project ID	Mentor ID

Mentor

Mentor ID	Team ID	First Name	Middle Name	Last Name	Email

Review

Review ID	Team ID	Panel ID	Day	Month	Year	Feedback

Panel

Panel ID	Judge ID	Team ID	Room No.