Project Proposal: Student Activity Tracker for Educational Institutions
Database Class (CSA)

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1. Problem Background (Domain)

In many educational institutions, tracking student participation in extracurricular activities. For example, sports, clubs, volunteer work, and workshops is a manual and fragmented process. This domain is critical for student development acting as a co-curricular management, but it is often poorly supported by technology.

Records can often be scattered across different departments, use insecure paper forms, or rely on disparate, error-prone spreadsheets.

This decentralizations leads to significant issues:
• Inefficiency: Administrators and faculty advisors spend large amount of time on manually collecting, entering, and verifying participation data instead of mentoring students.
• Inaccuracy and lack of verification: Manual data entry is prone to errors. Additionally, it is difficult to verify a student's legitimacy of the records.
• Lack of oversight: It is difficult foe the institution to get a clear overview of student engagement. They can't easily answer questions like, "Which student groups are being left out?" Or "Which clubs/activities are most popular?"
• Poor reporting: The struggle of students to get consolidated official record of their activities for CV or portfolios.

Our project aims to solve this by creating a centralized database application to efficiently manage, validate, and report on all student clubs and activities.

2. System Objectives
In this database project (Student Activity Tracker) the main objective is to design and implement a web-based application in which functions to manage student activities records and approvals. These objectives include:

- Build and develop user-friendly portal for students to read and browse all available activities. Additionally it gives students a platform to submit their participation records for approvals.
- Build and develop a centralized database which stores student's detailed and relational information, faculty, and all clubs/activities that are available.
- To provide a secure administrative interface for authorized faculty or staff to create new activities, update existing details or delete outdated activities.
- To implement a robust approval workflow where administrators or faculty can review student-submitted records and update their status to "Approved" or "Rejected".
- To build a key reporting feature that allows both students and administrators to read and generate reports of activity history.
- To ensure the entire system supports all core the operations (CREATE, READ, UPDATE, DELETE) for all main entities and is built on a database normalized to Third Normal Form or in short, 3NF.

3. System Users

In this project, the system will contain two primary type of users:

1. Student:

Description: This is the primary end-user of the system. They are participants in various clubs/activities and need a simple way to track their involvement.

Motivations: To browse for interesting extracurricular activities and get official validation for their participation to build their resume or portfolio.

Key Functions:
- To be able to browse a catalog of all available activities
- To be able to submit a "Participation Record"
- To be able to view status of their submitted records being pending, approved or rejected
- To be able to view and export a consolidated report of all approved activities.

2. Administrator / Faculty:

Description: To be able to have higher privileges ("manager" user) and holds responsibility for the integrity of the data (could be a advisor from a specific faculty for a club or a staff member of a faculty).

Motivations: To reduce their manual workload to maintain an accurate roster for their club, and ensure students record are valid before approved

Key Functions:
• Create, edit, and manage the official list of activities.
• View a pending/queue of all participation records from students.
• Review submission details and whether to approve or reject it.
• To be able to view roster of all students participating in a specific activity.

4. Key Use Cases:

Student use case: Submitting a record and viewing report
1. Student logs into the system
2. The Student navigate to their activities records and click to submit new record
3. They select the type of extracurricular activity they've done
4. They fill in the details like the role, total hours and date
5. They click "submit" and the record would be saved with a pending status
6. As time passes by for a week the student log into the system again and see the scrod is now approved and navigate to their report page
7. They see that the activity they've done are now listed on their official report, alongside their other approved clubs and activities.

Administrator use case: Approving a student's record
1. An advisor from a faculty logs into the system
2. The faculty advisor navigate to the pending approvals dashboard
3. They see the details of the submissions from a student and the descriptions and other information related to the submission
4. They review the student's submission
5. After confirming the student's participation, they click the approve button
6. The system then updates the record's stars of the student to approved, hence appears on the official report of the student.