

Synopsis - DBS

Student Management System

Problem Statement:

Provide a database for a Student Management System for a college, where students may access records for their attendance and marks, to keep track of their academic performance. Each student is identified by a unique registration number, allotted to them at the time of admission. Each student also has a unique learner_id, which is an email allotted to them by the college for official communications. They also have a specified branch, which lists the courses that it offers, and the department it is under. Your design should include a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.

Schema:

Student(regno, learnerid, name, branch, semester, year, bloodgroup, dob)

Department(dept_name, budget)

Courses(subject, department, branch)

Enrollment(regno, subject, department, year, semester, grade)

Classes(subject, department, year, semester, section, branch, room_number)

Teacher(teacher_id, subject, department, email, phone, loc)

Attendance(regno, subject, department, semester, year, attendance)

Marks(regno, subject, department, sessional, endsems, assignments, total)

Constraints:

Primary Keys are underlined above per relation.

Foreign Keys:

- Enrollment.regno references Student.regno
- Classes.subject references Courses.subject
- Attendance.regno references Student.regno
- Marks.regno references Student.regno
- Attendance.subject references Courses.subject
- Marks.subject references Courses.subject

- Attendance.department references Department.dept_name
- Courses.department references Department.dept_name
- Marks.department references Department.dept_name
- Teacher.department references Department.dept_name
- Teacher.subject references Courses.subject

UI has already been developed for the Java (OOP) Mini Project, and this project serves as a continuation for the same, adding more features and making it more implementable, realising the potential we see for this idea.

Team Members:

Name	Registration Number	Roll Number	Batch
Anuj Kamath	220962446	78	A2
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DBMS Mini Project Synopsis

1. Topic: Student Management System

2. Introduction:

Student Management System (SMS) plays a significant role in educational institutions by facilitating the organization and access of student information. This includes storing personal details, attendance records, and academic progress. To effectively manage this information, a robust Database Management System (DBMS) is vital. The DBMS ensures that the data is stored, updated, and retrieved quickly while maintaining the integrity of the data. It also helps in minimizing data redundancy.

Our project augments this student data management by providing an interface for users to easily achieve, and aims to provide an interface for users in which they can achieve their goal without going into details of understanding between the computer and human. We aim at minimizing the complexity of interacting with a SMS with this system.

3. Features

The database management system will provide the following functionalities:

- When enrolling, student's information, such as registration number, learner ID, name, branch, semester, and year are stored.
- Students can modify their own personal details, mark sheets, and attendance records as they wish.
- In the Student Management System, it is necessary for users to log in with their user ID and password safely stored.
- The administrator is solely able to restrict access to certain tables, such as the student table, department table..
- The database is secure when only the administrator can create basic student IDs. Only then can basic student IDs be created by the database.

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