CSE302: Database Systems (Section: 07) [Summer-25]

Project Report

Student Information Database System

https://apex.oracle.com/pls/apex/f?p=106602

Submitted by:

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Project Description

➢ The goal of our project is to develop a student information portal, a digital platform designed to manage and organize student data in a learning environment.

➢ The online portals that students and administrators use to access and manage academic and personal information in schools, colleges, and universities are close to the real-world situation that we are simulating.

➢ Its main objective is to properly store, manage, and easily access student data. Student names, IDs, courses, grades, attendance, contact information, and other academic records are among the data it will manage. This technology helps to maintain accurate student databases for efficient institutional operations, saves paperwork, and makes information easily accessible.

Key Features

The following key functions will be provided by the Student Information Portal:

- **Add New Records:** Allow administrators the ability to add new student profiles with academic and personal information.
- **Update Information:** When necessary, make changes or corrections to current student data.
- **Delete Records:** If a student's entry is no longer active, remove it from the system.
- **Search Functionality:** Find student records quickly by name, ID, or course.
- **View Academic Details:** Shows information on enrolled courses, grades, and attendance.
- **Report Generation:** Create a short overview of student records and performance.

Database Design

3.1 E-R Model
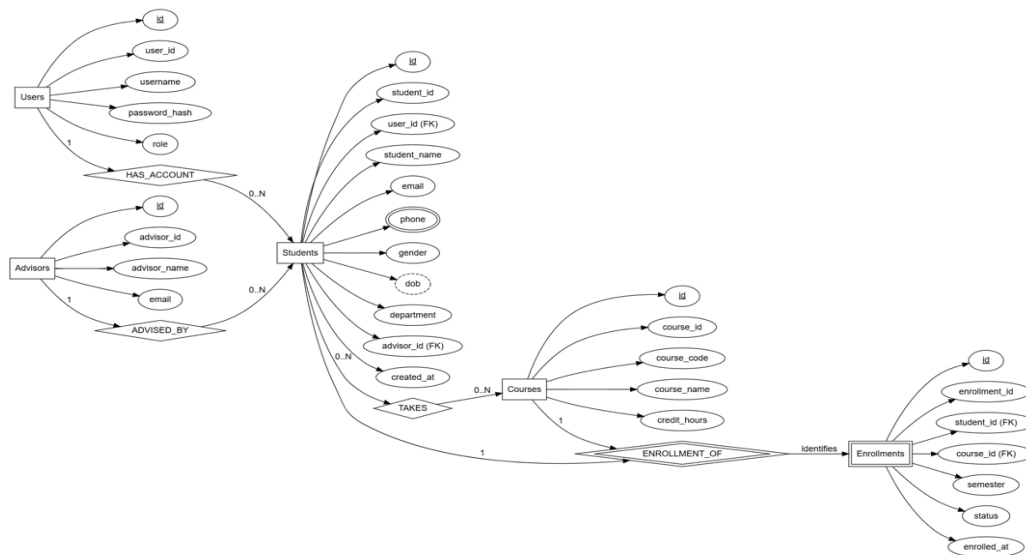
Schema Diagram
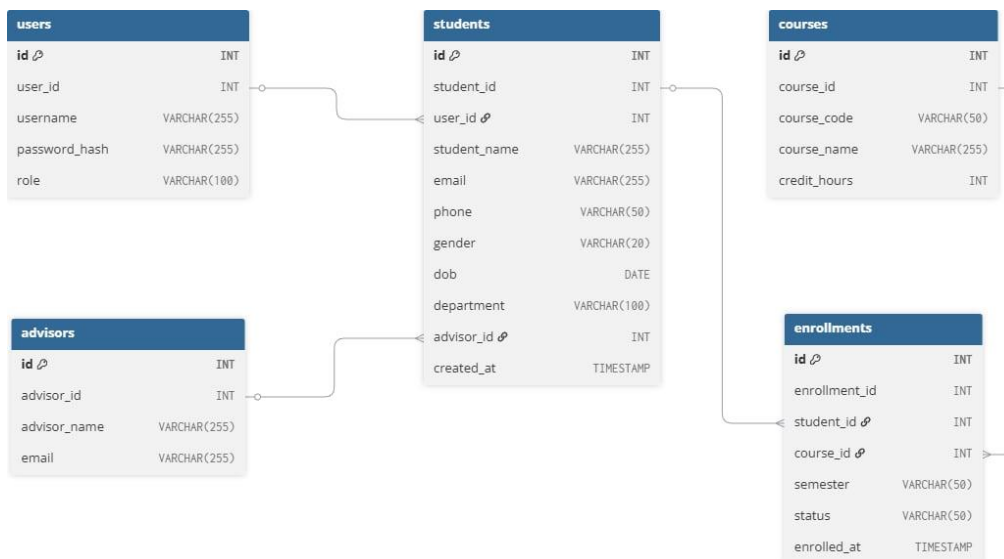
Tools & Technologies Used

Software Tool Used:

- **Database Management System (DBMS):** Oracle
- **Diagram Tools:** Draw.io and dbdiagram.io
- **Code Editor/IDE:** N/A
- **Operating System:** Windows

Programming languages:

- **Query Language:** SQL .

Role Assignment

1. Admin

- Has the ability to add, edit, or remove student records.
- Controls system settings and user accounts.
- Creates reports for attendance, performance, and the database as a whole.

2. Teacher
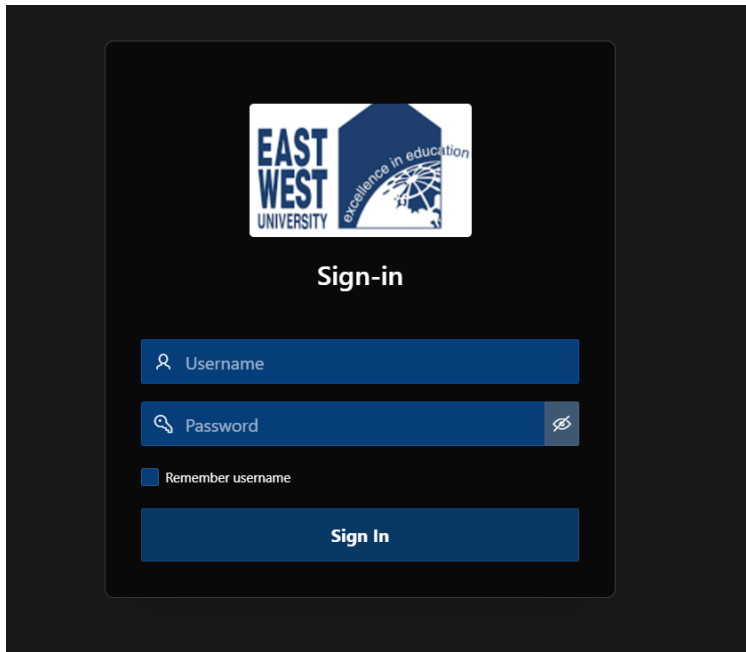
- Can see academic information and student data.
- Capable of updating course data, attendance, and grades.
- Capable of producing performance reports for the class.

3. Student

- Able to access personal profiles by logging in.
- Able to verify enrollment courses, attendance, and grades.
- Can change certain personal information, such as contact data.
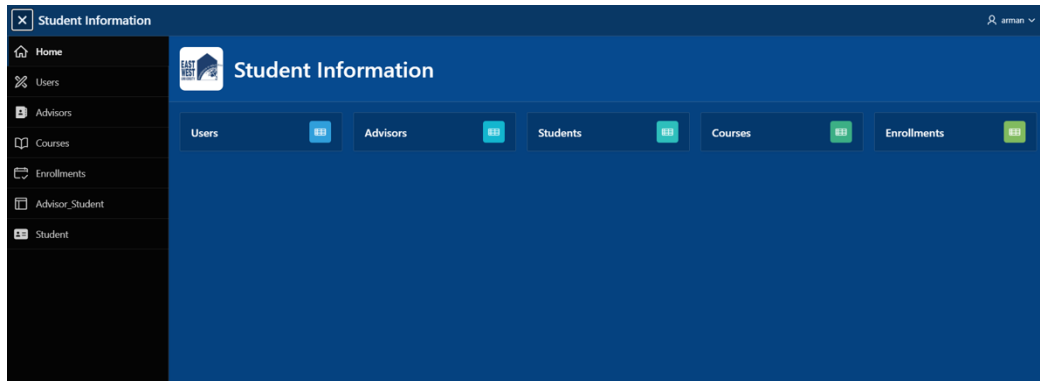
GUI Screenshot

Sign in page:

Home page:

Users info:

Student Info: From here, admin can create, delete and update students profile.

	Student ID	User	Student Name	Email	Phone	Gender	Dob	Department	Advisor	Created At
✎	62	arman	Hossain Mohammad Sidratul Muntaha	2023-2-60-018@std.ewubd.edu	01234567894	Male	6/3/2010	CSE	Dr. Rahma	6 days ago
✎	45	tasnim	John Doe	john@std.ewubd.edu	01700000001	Male	8/23/2025	CSE	Dr. Rahma	11 days ago
✎	121	arman	Fahim Rahman	2023-2-60-246@std.ewubd.edu	01264433678	Male	8/7/2025	EEE	Dr.Iqbal Hossain	2 days ago
✎	141	arman	Sourav Ahmed	2023-2-60-053@std.ewubd.edu	023467675654	Male	6/5/2025	CSE	Khalid Mahbub Khan	2 weeks from now
✎	81	arman	Tasnim	2023-2-60-149@std.ewubd.edu	012345679012	Male	8/29/2025	CSE	Dr. Rahma	5 days ago

1 - 5

Advisor info: From here, admin can create, delete and update advisors profile.

Course list: From this page, students can view their courses and the admin can create new courses and update course list.

Enrollment Page:

Advisor & Student Page: here is the records of the students and advisors relations. The records of students are enrolling under the advisors.

Conclusion

The development of the Student Information Portal taught us how to create and put into place a database system that effectively handles student records. Through this project, we was able to have practical experience with role-based access, SQL queries, and the general architecture of an information management system. Creating an effective database structure, guaranteeing data consistency, and troubleshooting issues during the database-application integration process were some of the difficulties we faced. The project offered useful technical and problem-solving skills in spite of these challenges. A secure login process, a web-based interface, online course registration, and data analytics integration to better monitor student performance patterns are some future enhancements that can be made to the system.

References

Database System Concepts by Avi Silberchatz, Henry F. Korth, S. Sudarshan
Seventh Edition
https://db-book.com/

https://youtu.be/dvdR2jovLaE?si=ycs1D4slpEIBcTwV