INTRODUCTION

Creating a relational database to accommodate the features needed by the computer engineering department is the aim of this project. The database will control the personal data of the students, the payment of fees, the enrollment in the courses, the lectures to course assignments, and the lectures to TA assignments. Because PostgreSQL is open-source and offers many advanced features, it has been selected as the database management system.

DATABASE DESIGN

We will create a database named "`computer_engineering_db`" and execute the sql to create tables including ;

1. `students`
2. `fees_payments`
3. `courses`
4. `enrollments`
5. `lectures`
6. `ta_assignments`

IMPLEMENTATION

Then the data insertion script is executed to populate the table. Also the the script is executed to create the 'calculate_outstanding_fees' function.

CONCLUSION

This brief report tend to describe the steps taken to develop and implement the relational database for the computer engineering school to support functionalities for managing students information. Also postgreSQl was used to implement the database.

2. **1. INTRODUCTION**

The objective of this project is to develop a web application using Next.js 14, which includes functionalities for user login, registration, and a dashboard. Clerk is used for user authentication and management.

2. SETUP

First a new next.js project was created using the command 'npx create-next-app@latest and the app was named 'my-app'. An authentication to implement Clerk was also installed using 'npm install @clerk/nextjs' command.

3. IMPLEMENTATION

Files such as '.env.local' were created to configure Clerk in the application. Also 'pages/sign-in.tsx' and 'pages/sign-up.tsx' where used to implement the sign-in and sign-up functionalities. A dashboard page was created to protect Clerk's authentication. Also headers were included easier navigations.

4. TESTING

After all the authentications the app was tested using the 'npm run dev' command.

5. DEPLOYMENT

The source code was pushed to GitHub repository.

6.CONCLUSION

This report outlines the steps taken to develop a Next.js 14 appplication with login, register. And dashboard.