Project

DEPARTMENT OF SOFTWARE ENGINEERING (SE)

SECTION: BS(SE)-Q

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Project Report: Implementation of Google Classroom

1. Introduction:

The purpose of this project is to develop an online platform similar to Google Classroom, designed to streamline the process of teaching and learning for educational institutions. The platform allows teachers to create, distribute, and grade assignments, as well as communicate with students in a secure online environment. The project includes two major panels: the Teacher Panel and the Student Panel. The Teacher Panel provides functionalities for managing classes, announcements, assignments, class materials, deadlines, grading, and comments. The Student Panel allows students to enroll in classes, submit assignments, and manage their own comments on announcements and assignments.

2. Approach:

To implement the Google Classroom platform, we followed a systematic approach that involved the following steps:

2.1. Requirements Gathering:

We gathered the functional requirements for both the Teacher Panel and the Student Panel. These requirements formed the basis for designing the system.

2.2. System Design:

Based on the requirements, we designed the system architecture and created an Entity-Entity Relationship Diagram (EERD). The ERD represents the database schema and the relationships between different entities such as classes, teachers, students, assignments, and announcements etc.

2.3. User Interface Design:

We designed the user interfaces for both the Teacher Panel and the Student Panel. The interfaces were designed to be intuitive and user-friendly, allowing teachers and students to easily navigate through the system and perform their respective tasks.
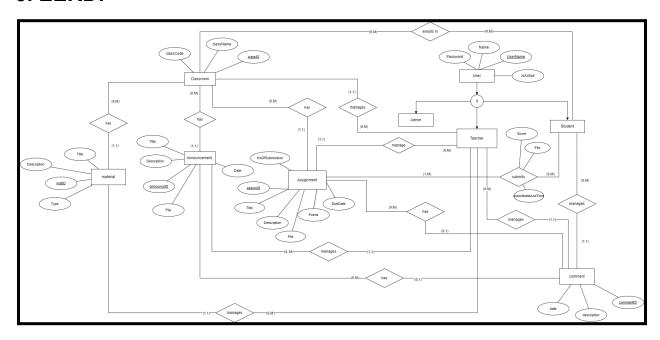
2.4. Database Implementation:

We implemented the database using sql server. The database was designed according to the EERD, and tables were created to store the necessary data for classes, teachers, students, assignments, announcements, and comments etc.

2.5. Implementation:

We developed the backend functionality of the system using C# language and its framework "Window forms" for design. The backend code included logic for creating and managing classes, announcements, assignments, deadlines, grading, and comments. It also implemented the necessary authentication and authorization mechanisms for admin, teachers and students.

3. EERD:

4. Report screenshots:

Student Report:

Submission and grade Report:

Student Assignment Score

Assignment ID	Student UserName	Submission Points	Submission Date
5	student	8	21/05/2023 20:04:24
7	student	9	21/05/2023 20:04:49
7	TauseefRazaq	7	21/05/2023 20:02:44

5. Learning:

During the development of this project, we gained valuable insights and knowledge. Some of the key lessons learned include:

5.1.Comprehensive understanding of requirements: It is crucial to thoroughly understand the project requirements before starting the development process. Clear requirements help in designing and implementing a successful project.

5.2.Effective database design: Proper database design and normalization are essential for maintaining data integrity, optimizing system performance, and ensuring scalability. A well-designed database schema facilitates efficient data retrieval and manipulation.

5.3.User-centric interface design: Prioritizing usability and intuitiveness in user interface design enhances the overall user experience. Designing interfaces that are easy to navigate and understand contributes to user satisfaction and engagement.

5.4.Effective collaboration and communication: Successful project development requires effective collaboration and communication among team members. Regular communication, sharing progress updates, and addressing challenges collectively contribute to the smooth development and timely completion of the project.

6. Project Improvement and Conclusion:

This project can be further improved in several ways. Some possible enhancements include:

- Implementation of additional features such as a discussion forum or a chat system to facilitate communication between teachers and students.
- Integration of file upload functionality for assignments and class materials.
- Enhancement of the grading system to provide more detailed feedback and performance analytics for students.

- Implementation of notification mechanisms to keep users informed about new announcements, upcoming deadlines, and assignment feedback.

In conclusion, the implementation of Google Classroom successfully achieved the goals of providing an online platform for managing classes, assignments, and communication between teachers and students. The project demonstrated the effective use of database design, frontend development, and backend programming to create a functional and user-friendly system. The lessons learned from this project will be invaluable in future endeavors, and the identified improvements will further enhance the system's usability and functionality.