SRS DOCUMENT

E-LEARNING PLATFORM

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BAC

1. <u>INTRODUCTION</u>

1.1. Purpose

The purpose of this document is to provide an overview of the e-learning platform I am building. It will describe the platforms purpose, features, interfaces and any responses to external input and also it will describe the constrains within which the system can operate.

1.1. Project Proposal

As education continues to integrate with technology, it has shown that students really from learning with others rather than relying on traditional instructor-led methods. This platform aims to create a community-driven learning environment where university students can share resources, engage in public discussions, and test their knowledge through quizzes. The platform's primary features include account creation and login, a chat-to-everyone function, file sharing, and quizzes. By focusing on peer interaction, this platform supports students in understanding challenging topics, sharing educational resources, and promoting a collaborative approach to e-learning.

2. <u>Overall Description</u>

2.1 System Environment

The e-learning platform aims to enhance collaborative learning through a peer-to-peer model, allowing students to interact through chat, file sharing, and quizzes. The platform supports a multi-user environment with authentication, interactive communication, and file storage. Figure 1 depicts the high-level environment of the system.
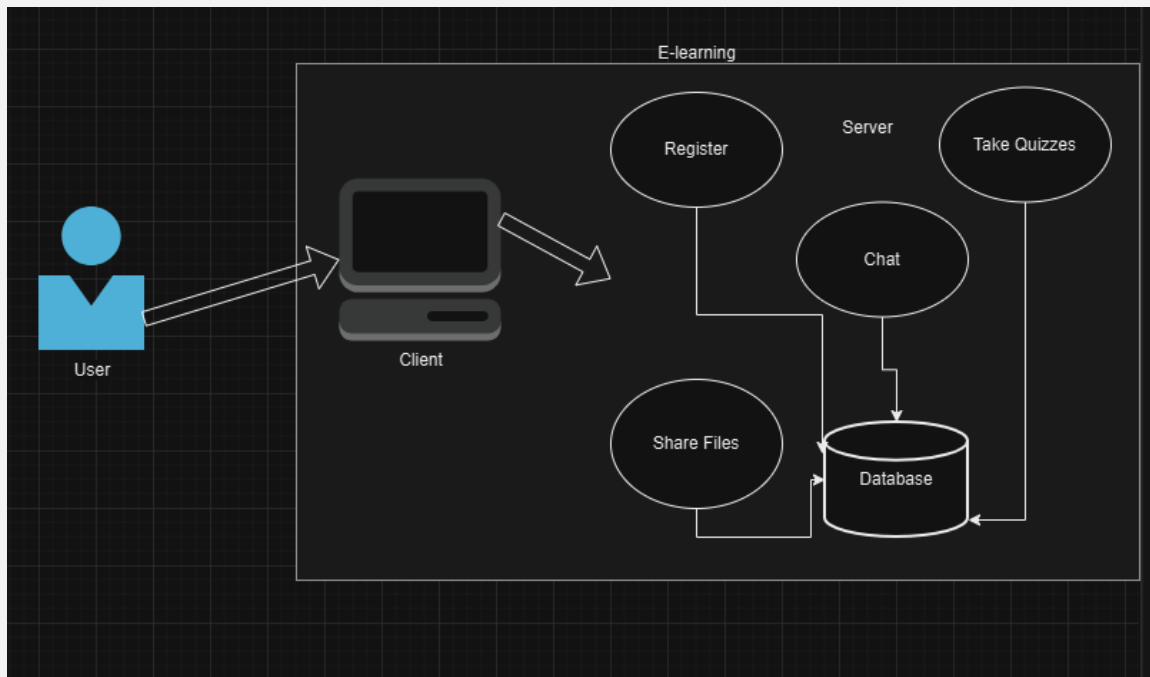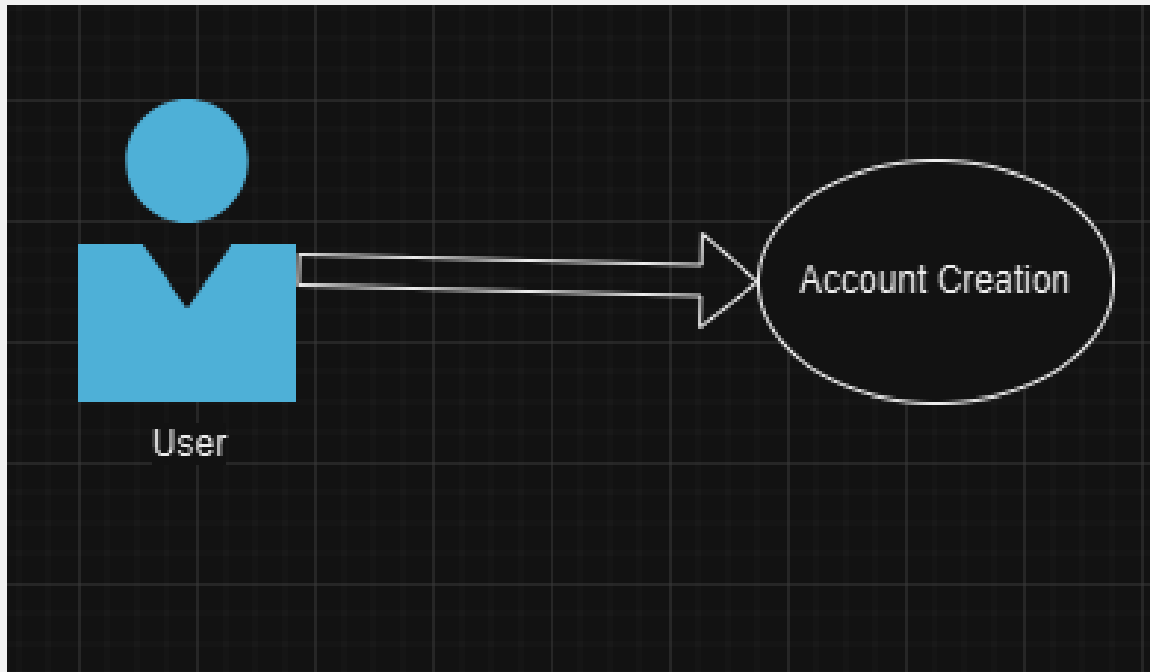

Figure 1: System Environment

2.2 Functional Requirements Specification

This section outlines the use cases for the primary activities within the platform.

2.2.1 Register User Use Case

Use Case: Account Creation

Brief Description:
The user must register to gain access to the platform's features.

Step-by-Step Description:

1. The user navigates to the registration page.

2. The system prompts the user to enter required details (e.g., username, email, password).

3. The user submits the registration form.

4. The system validates the data and creates the account

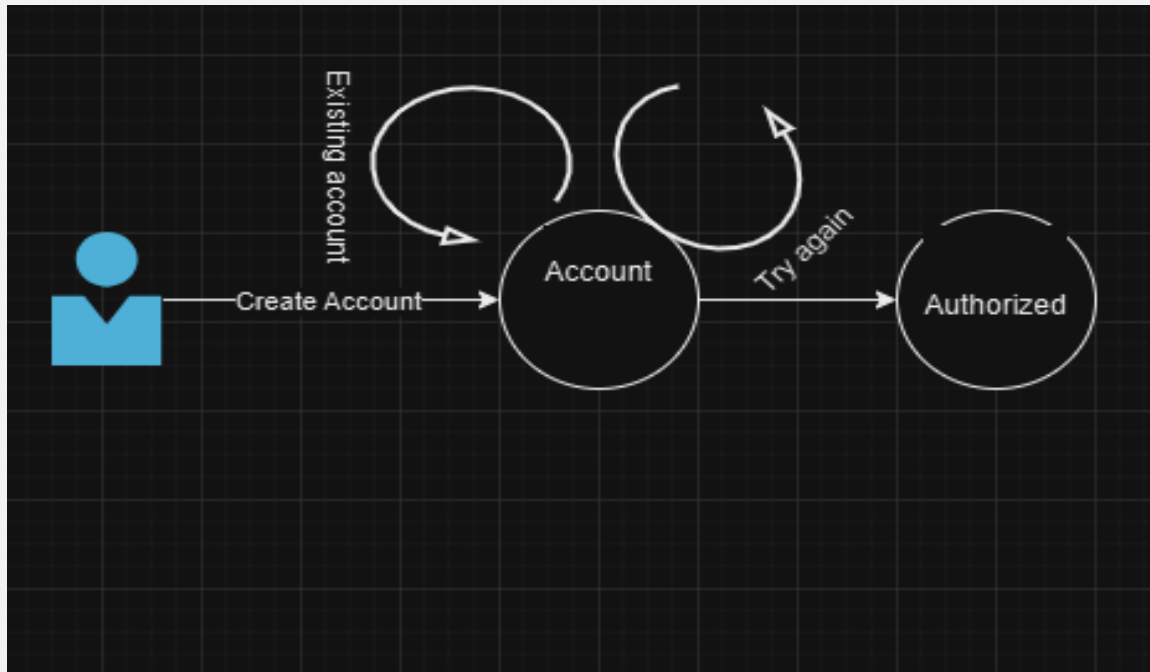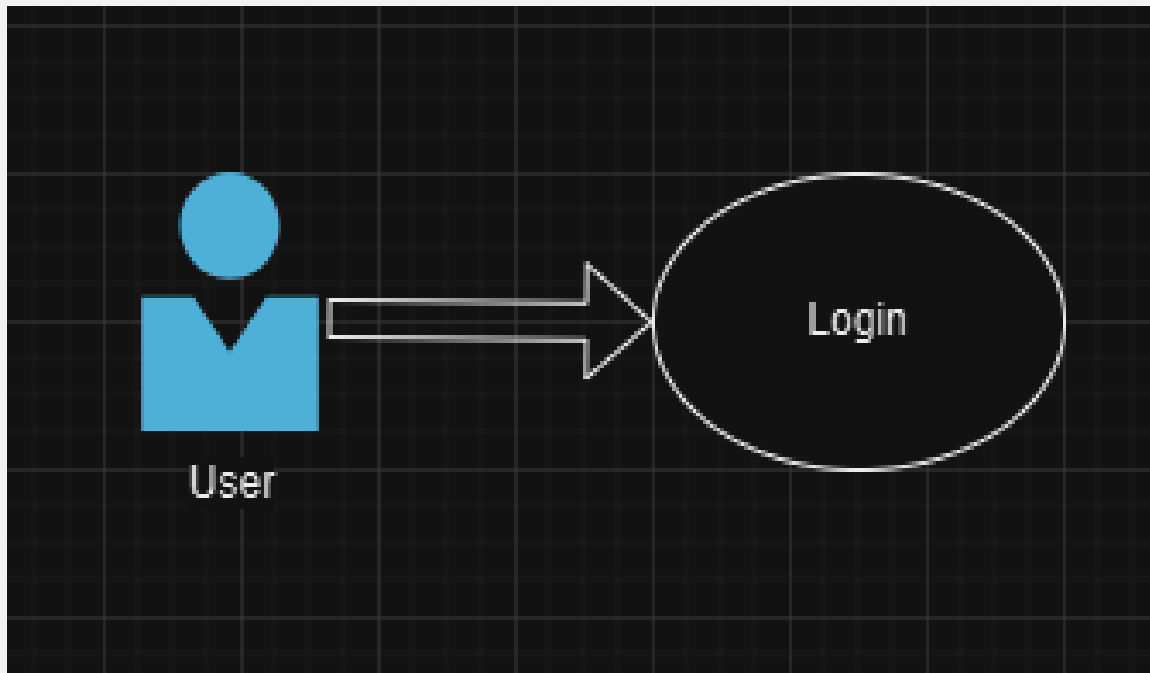5. Upon confirmation, the user gains access to the platform.

Figure 2: Account Creation Process

2.2.2 Login Use Case

Use Case: User Login

User
Brief Description:
Registered users can later on log in to access the platform's features.

Step-by-Step Description:

1. The user navigates to the login page.

2. The system prompts for the user's credentials (email and password).

3. The system verifies the credentials and grants access if they are valid.

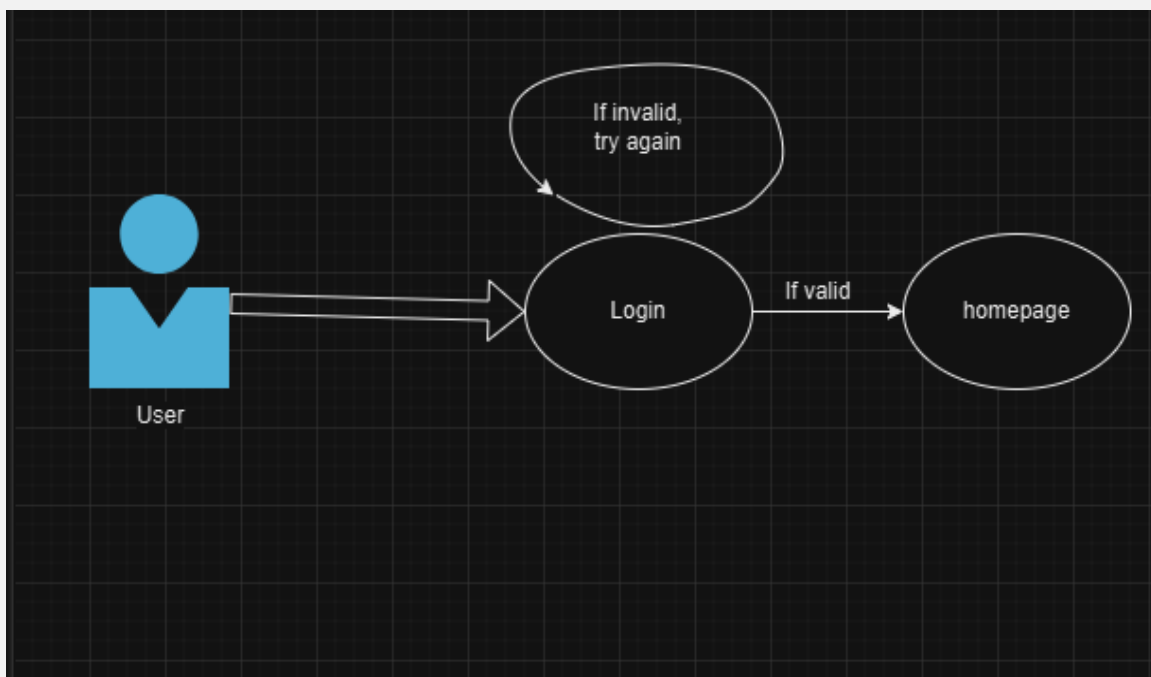4. The user is directed to the home page with available features.

Figure 3: Login Process

2.2.3 User Use Cases

After the user has successfully logged into the platform, he/she will be able to perform these actions:
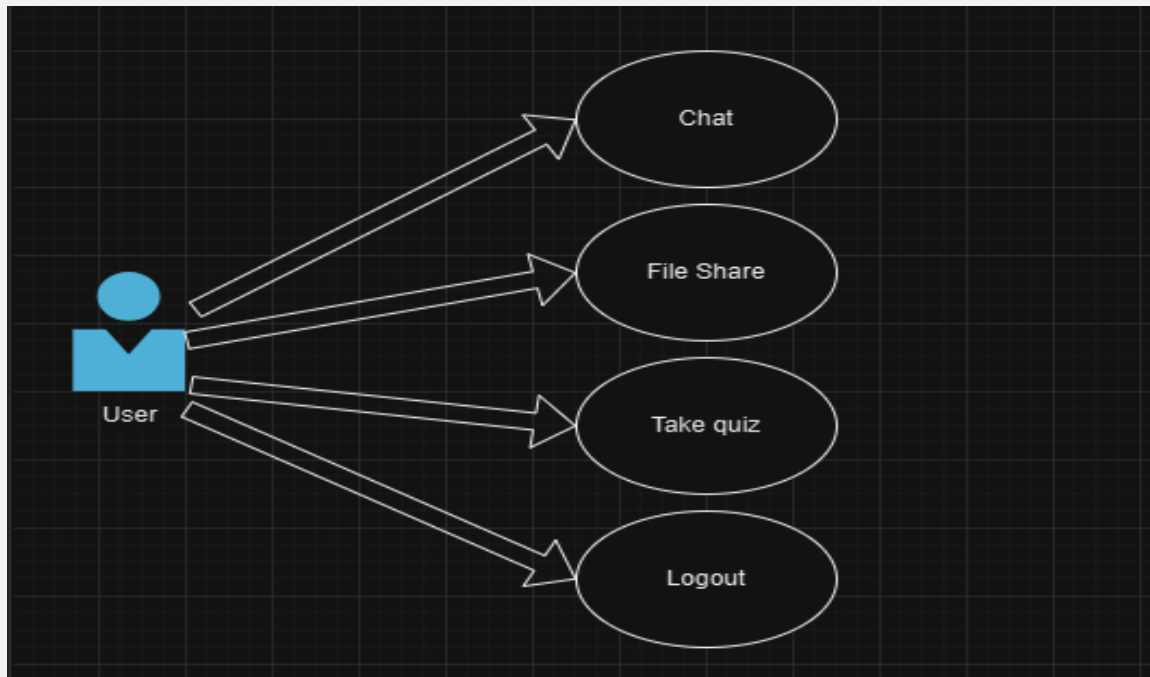

Figure 5: User Use Cases

2.3 User Use ER Diagram

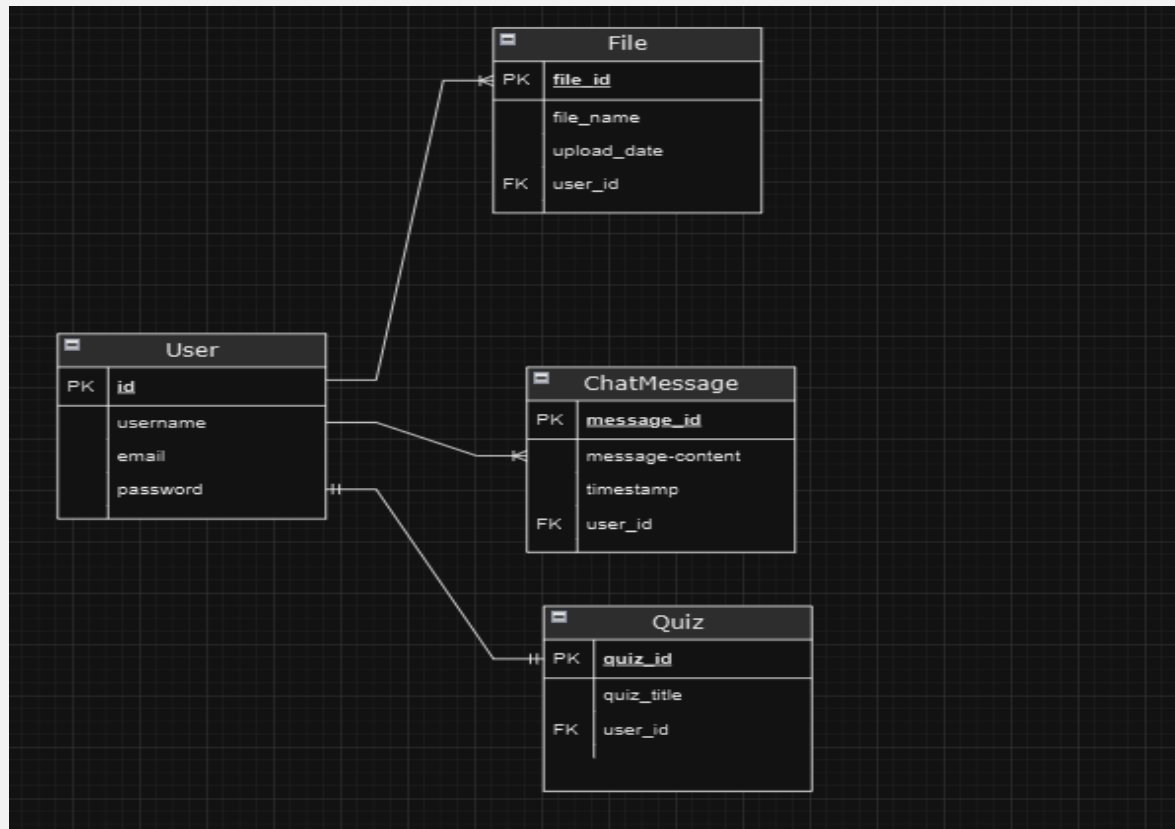Below is a diagram showing entity relationships as user uses platform:

Figure 6: ER Diagram

2.4 System Data Flow Diagram (DFD)

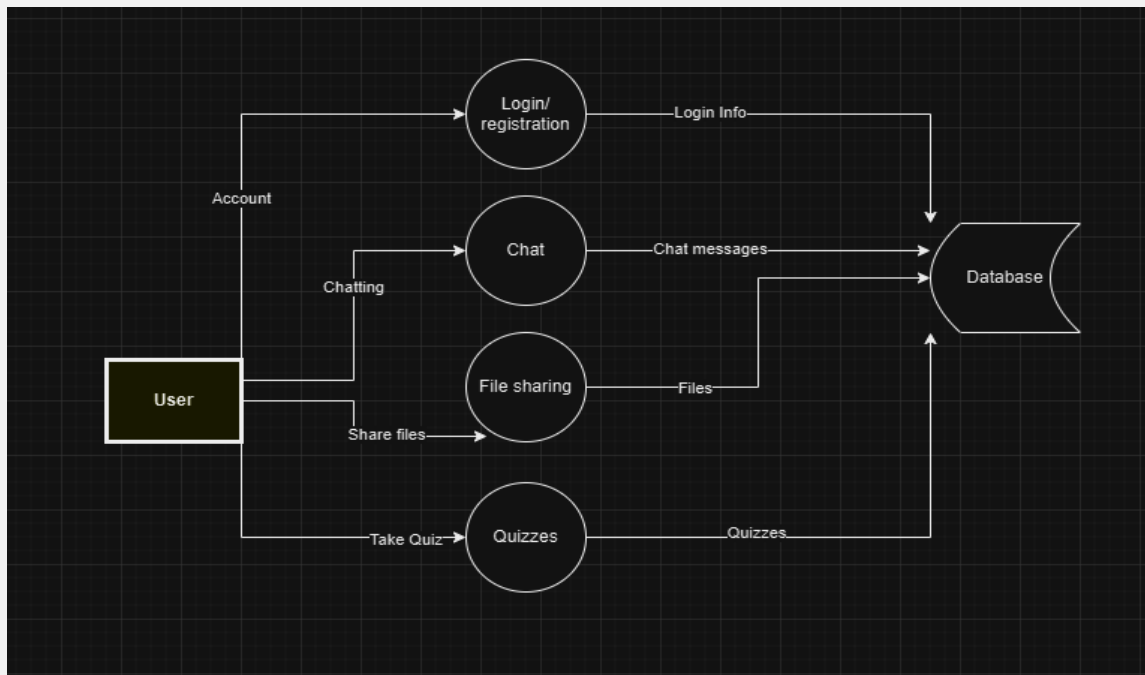The following DFD illustrates the flow of data within the system for user data, chat messages, and file sharing.

Figure 7: System Data Flow Diagram

2.4 Non-Functional Requirements

- **Performance:** The system should handle simultaneous users in the chat and file-sharing areas without lag.

- **Usability:** Interfaces should be intuitive for users of different technical backgrounds.

- **Scalability:** The platform should be able to expand with additional features without compromising performance.

- **Security:** User data and shared files must be encrypted to protect against unauthorized access.

- **Reliability:** The system should have minimal downtime to ensure users can access resources consistently.

3.   <u>System Design</u>

Description of procedures and systems

- The front-end of the platform will be built using React.js
- The back-end will be built using Python
- It will be accessible by both android and desktop devices.

4.   <u>Implementation and Testing</u>

Will have Three main interfaces:

- Register
- Login
- Landing page

Three Interactives:

- General chat
- File sharing
- Quizzes

Will have three databases:

- User database
- Chat database
- File database