Project Description

       Our e-learning platform is designed to cater to the distinct needs of students, teachers, and administrators, ensuring a seamless and integrated experience for all participants. Upon entering the app, users are prompted with a login/signup feature, enabling them to securely access their profiles. All users will have the ability to update their personal details. For administrators, our platform provides administrators with the ability to create courses. These administrators also have the critical responsibility of reviewing and admitting students into courses. On the other hand, students are able to browse and enroll in these courses. A defining aspect of our platform is the dynamic assignment feature. Teachers have the flexibility to create a variety of assignments, from quizzes to essays, while also allowing for students to submit their work directly within the platform. Additionally, our grading system allows teachers to assess student submissions and offer feedback and a grade on the assignments. To pair with that, students are able to view this feedback on the assignments.

Use Case Description

Use Case 1: Enroll in a course
Primary actor: Student
Description: Describes the process when a student registers for a course.
Precondition: Student must have been successfully logged in.
Postcondition: If successful student registration, billing and registration databases are updated.

Use Case 2: Login/Register for an account
Primary actor: Student
Description: Describes the process when a student logs or registers for an account
Precondition: A student must not already be logged in.
Postcondition: If successful student account registration or login is successful then the student should now be logged in.

Use Case 3: Login/Register for an account
Primary actor: Teacher
Description: Describes the process when a teacher logs or registers for an account
Precondition: A teacher must not already be logged in.
Postcondition: If successful teacher account registration or login is successful then the teacher should now be logged in.

Use Case 4: Login/Register for an account
Primary actor: Administrator
Description: Describes the process when an administrator logs or registers for an account

Precondition: An administrator must not already be logged in.
Postcondition: If successful administrator account registration or login is successful then the administrator should now be logged in.

Use Case 5: Update user details for an account
Primary actor: Administrator
Description: Describes the process when an administrator updates user details for an account
Precondition: An administrator must already be logged in.
Postcondition: If successful, an administrator's account details should be updated and saved.

Use Case 6: Update user details for an account
Primary actor: Student
Description: Describes the process when a student updates user details for an account
Precondition: A student must already be logged in.
Postcondition: If successful, a student's account details should be updated and saved.

Use Case 7: Update user details for an account
Primary actor: Teacher
Description: Describes the process when a teacher updates user details for an account
Precondition: A teacher must already be logged in.
Postcondition: If successful, a teacher's account details should be updated and saved.

Use Case 8: Create courses
Primary actor: Administrator
Description: Describes the process when an administrator creates a course.
Precondition: An admin must already be logged in and the course should not already exist.
Postcondition: If successful, a new course should be created.

Use Case 9: Accepts students into a course
Primary actor: Administrator
Description: Describes the process when an administrator verifies the student details and accepts a student into the course.
Precondition: An admin must already be logged in and the student should not already be enrolled in the course.
Postcondition: If successful, the student should now be enrolled in the course.

Use Case 10: Create Assignments
Primary actor: Teacher
Description: Describes the process when a teacher creates a new assignment(quiz or essays).
Precondition: A teacher must already be logged in.

Postcondition: If successful, a new assignment should be created for the course.

Use Case 11: Enroll in course
Primary actor: Student
Description: Describes the process when a student enrolls in a course.
Precondition: A student must be logged in.
Postcondition: If successful, a student's request to be enrolled in a course should be sent to an administrator so they can accept them into the course.

Use Case 12: Submit Assignment
Primary actor: Student
Description: Describes the process when a student submits an assignment.
Precondition: A student must be logged in and the assignment should exist.
Postcondition: If successful, a student's assignment should be submitted and visible to teachers.

Use Case 13: Grade Assignment
Primary actor: Teacher
Description: Describes the process when a teacher grades a student's assignment.
Precondition: A teacher must be logged in and the assignment should exist.
Postcondition: If successful, a teacher will assign a grade to a student's assignment.

Use Case 14: View Grades
Primary actor: Student
Description: Describes the process when a student views an assignment
Precondition: A student should be logged in.
Postcondition: If successful, a student will be able to view their grade on the assignment.

User Requirements
As a Teacher:
1. As a teacher, I want to register and log in to the platform so that I can access my teaching dashboard and manage my courses.
 - Acceptance Criteria:
        - There should be a secure registration and login process for teachers.
        - The login should lead to a personalized dashboard where teachers can view and manage their courses.

 2. As a teacher, I want to update my user details to ensure my profile is current and accurate.
- Acceptance Criteria:
        - Teachers should be able to easily access and edit their profile information

- Changes made to user details should be saved and reflected immediately.

3. As a teacher, I want to create courses to provide educational content for my students. - Acceptance Criteria:

- The platform must allow teachers to create and publish course materials in a structured format.

- Teachers should have the ability to include multimedia elements such as videos, PDFs, and slides within their courses.

4. As a teacher, I want to create assignments for my students so that I can assess their understanding of the course material.
- Acceptance Criteria:

- The system should provide a feature for teachers to create various types of assignments, including quizzes and essays.

- There must be an option to specify submission deadlines and grading criteria.

As a Student:
1. As a student, I want to register and log in to the platform so that I can access my learning materials and participate in courses.
- Acceptance Criteria:

- Students should be able to register for an account and log in securely.

- Upon logging in, students should see a dashboard with their courses and activities.

2. As a student, I want to enroll in courses so that I can begin learning the course material.
- Acceptance Criteria:

- The process of enrolling in a course should be simple, with clear instructions provided.

- Once enrolled, students should have immediate access to course content.

3. As a student, I want to submit assignments to demonstrate my understanding and receive feedback.
- Acceptance Criteria:

- Students should be able to submit assignments directly on the platform.

- The system should acknowledge receipt of the submission and track its status.

4. As a student, I want to view my grades to keep track of my academic performance.
- Acceptance Criteria:

- The platform must provide a feature for students to view grades on assignments and overall course progress.

- The grading interface should be intuitive and provide detailed feedback from teachers.

5. As a student, I want to update my user details to maintain an accurate and up-to-date profile.
- Acceptance Criteria:
        - Students should have the ability to edit their personal information within their profile settings.
        - Any updates made to the profile should be saved and take effect immediately.

As an Admin:
1. As an admin, I want to log in to the platform to manage users and oversee platform operations.
 - Acceptance Criteria:
        - There should be a secure login process for admins with multi-factor authentication
        - Admins should have access to a dashboard that allows them to manage users and monitor platform activity.

2. As an admin, I want to update user details to assist with account management and user support.
- Acceptance Criteria:
        - Admins should be able to search for user accounts and edit details as required. - Changes should be logged for auditing purposes.

3. As an admin, I want to create and manage courses to ensure that the educational content remains relevant and up-to-date.
- Acceptance Criteria:
        - Admins should have the ability to add, edit, and delete courses on the platform.
        - There should be a process in place for reviewing and approving courses created by teachers.

4. As an admin, I want to oversee the assignment submission and grading process to ensure it runs smoothly.
- Acceptance Criteria:
        - Admins need to have visibility into the assignment workflow and be able to troubleshoot issues if they arise.
        - There should be tools for admins to generate reports on assignment submissions and grading statistics.

Functional Requirements for Students:
Account Management:
·   Register for a new student account.
·   Log in to their account.
·   Update their personal and login details.

Course Interaction:

· Enroll in courses after browsing the available options.

Assignment Management:

· Submit assignments for their courses.
· View grades for their submissions.

Functional Requirements for Teachers:

Account Management:

· Register for a new teacher account.
· Log in to their account.
· Update their personal and login details.

Assignment Management:

· Create assignments, including quizzes and essays, for their courses.
· Grade student submissions for these assignments.

Functional Requirements for Admins:

Account Management:

· Register for a new admin account.
· Log in to their account.
· Update their personal and login details.

Course and User Oversight:

· Create new courses in the system.
· Oversee and confirm student enrollments in courses.

Non-Functional Requirements:

Security:
● All user data, including personal details, login credentials, and submitted assignments, should be encrypted to ensure data security.
● The platform must implement secure login processes with multi-factor authentication for administrators to enhance account security.
● Access to sensitive information, such as grades and user details, should be role-based and restricted to authorized personnel.

Scalability:
● The platform should be designed to handle a scalable number of users, courses, and assignments to accommodate potential growth in user base and content.

Performance:

- The system response time for actions such as logging in, updating user details, and accessing course materials should be optimized to provide a seamless user experience.
- The platform should be able to handle concurrent submissions and grading processes without significant performance degradation.

Availability:
- The platform should have high availability, with minimal downtime for maintenance, updates, or unexpected issues.
- A reliable backup and recovery system should be in place to prevent data loss and ensure quick recovery in case of system failures.

Compliance:
- The platform must comply with relevant data protection laws and regulations to ensure the privacy and security of user data.
- Accessibility standards should be followed to make the platform usable by individuals with disabilities.

User Interface:
- The user interface should be intuitive, with clear navigation and user-friendly design, to enhance the overall user experience for teachers, students, and administrators.

Protocols/Personas:

Administrator Persona:
- Name: Admin Aiden
- Role: System Administrator
- Responsibilities: Overseeing platform operations, managing user accounts, creating and approving courses, monitoring assignment workflows.
- Protocols:
    - Admins log in using a secure multi-factor authentication process.
    - Admins can search for user accounts and edit details, with changes logged for auditing purposes.
    - Admins have tools to troubleshoot issues related to assignment submissions and grading.

Teacher Persona:
- Name: Teacher Taylor
- Role: Educator
- Responsibilities: Creating and managing courses, creating assignments, grading student work.
- Protocols:
    - Teachers log in securely to access their teaching dashboard and manage courses.

- Teachers can easily update their profile information, and changes are reflected immediately.
- Teachers create and publish course materials with multimedia elements.
- The system provides features for creating various assignment types with specified deadlines and grading criteria.

Student Persona:
- Name: Student Sam
- Role: Learner
- Responsibilities: Enrolling in courses, submitting assignments, viewing grades.
- Protocols:
    - Students register and log in securely to access learning materials and participate in courses.
    - The process of enrolling in a course is simple, with clear instructions provided.
    - Students submit assignments directly on the platform, and the system acknowledges receipt and tracks submission status.
    - The platform provides a feature for students to view grades with an intuitive and detailed feedback interface.