Project Overview

The Education Technology Platform will be a secure, cloud-based system designed to help educational institutions manage student data efficiently. The platform will focus on encrypted storage, access control, and anomaly detection to ensure data security and integrity.

Modules

To keep the project organized and scalable, I propose breaking it into the following modules:

1. **User Authentication and Access Control Module**
    - ✓ Handles user registration, login, and role-based access control (Admin, Teacher, Student).
    - ✓ Ensures secure authentication using password hashing and session management.

2. **Student Data Management Module**
    - ✓ Allows admins and teachers to add, update, delete, and view student records.
    - ✓ Stores student data (e.g., name, ID, class, grades) in an encrypted format.

3. **Coursework Management Module**
    - ✓ Enables teachers to upload coursework (e.g., assignments, exams) for students.
    - ✓ Students can view and download their coursework securely.

4. **Anomaly Detection Module**
    - ✓ Monitors user activity (e.g., login attempts, access to sensitive data).
    - ✓ Alerts administrators of suspicious behavior (e.g., multiple failed login attempts, unauthorized access attempts).

5. **Dashboard Module**
    - ✓ Provides a user-friendly interface for admins, teachers, and students to interact with the platform.
    - ✓ Displays relevant data based on the user's role.

6. **Database Module**
    - ✓ Manages the MySQL database schema and connections.
    - ✓ Ensures data is stored securely and efficiently.

Technology Stack

- ✓ Frontend: HTML, CSS, Bootstrap, jQuery for a responsive and interactive user interface.
- ✓ Backend: Python (Flask or Django) for server-side logic and API development.
- ✓ Database: MySQL for storing student records, coursework, and user data.
- ✓ Security: Password hashing (e.g., bcrypt), encryption (e.g., AES), and session management for secure access.