EduConnect- Assignment Management System

1. System Architecture Overview

Introduction:

EduConnect is a web-based assignment management system designed to streamline the process of creating, submitting, and viewing assignments for both teachers and students. It provides a secure platform for user authentication (teachers/students) and features intuitive dashboards for managing educational tasks and submissions

Key Components:

- **Client Applications:** Web (Frontend) and potentially Mobile apps.

- **API Gateway:** Handles request routing, authentication, and authorization.

- **Microservices:**

    o **User Service:** Manages user profiles (Student, Teacher) and roles.

    o **Course Service:** Manages courses and enrollments.

    o **Assignment Service:** Manages assignment creation and details.

    o **Submission Service:** Handles student submissions and file storage.

- **Databases:**

    o **Relational DBs (e.g., PostgreSQL):** For structured data (users, courses, assignments, submission metadata). Each service has its own database/schema.

    o **Object Storage :** For storing large binary submission files.
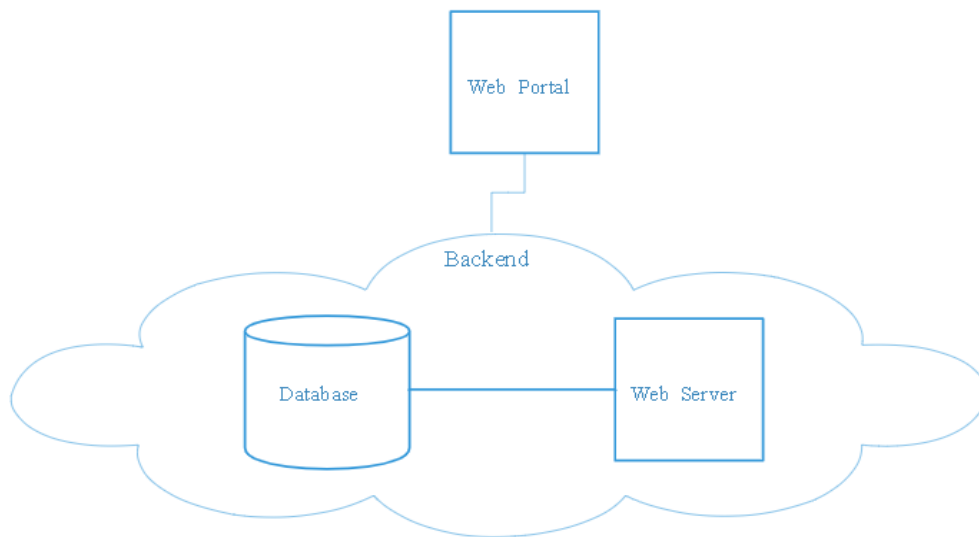
3. Core Entities

User: id, name, email, role (student, teacher)

Course: id, name, description, teacherId

Assignment: id, courseId, title, description, dueDate, maxPoints, createdBy

Submission: id, assignmentId, studentId, submittedAt, fileUrl, comments, status

4. Authentication Strategy

Token-Based Authentication with JWTs and RBAC:

- Users log in to get a **JWT** (JSON Web Token) containing userId and role.

- The client sends this JWT with every request in the Authorization header.

- The **API Gateway** validates the JWT and enforces **Role-Based Access Control (RBAC)**:

  o **Teacher:** Create assignments, view all submissions for their courses.

  o **Student:** View assignments, submit their own assignments.