Product Requirements Document (PRD)

# Frontend – Online Assignment Management System

## 1. Overview

The frontend is a React-based web application for managing assignments between lecturers and students. It supports user authentication, assignment creation, submission, viewing, and file handling.

## 2. User Roles

- Student: View assignments, submit assignments, view submission status  
- Lecturer: Create assignments, view student submissions, download submissions

## 3. Pages/Features

- Login/Register: User authentication and account creation  
- Dashboard: Overview of system status  
- Assignment List: Displays assignments relevant to the logged-in user  
- Assignment Create: Allows lecturers to create new assignments  
- Assignment Submit: Enables students to upload and submit assignments  
- Submission View: Lets lecturers view and download submissions

## 4. Technologies

React, Axios, React Router, Context API, CSS

## 5. Security

JWT token handling via Context API and role-based rendering.

# Backend – Online Assignment Management System

## 1. Overview

The backend is built with Node.js, Express, and MongoDB. It manages authentication, assignment records, file uploads, and student submissions.

## 2. User Roles

- Student  
- Lecturer

## 3. Endpoints

Auth:  
 - POST /api/auth/register: Register a user  
 - POST /api/auth/login: Login and return a token  
  
Assignments:  
 - POST /api/assignments: Create assignment (lecturer only)  
 - GET /api/assignments: Fetch all assignments  
 - GET /api/assignments/:id: Get assignment by ID  
  
Submissions:  
 - POST /api/submissions: Submit an assignment (student only)  
 - GET /api/submissions: Get all submissions (lecturer only)  
 - GET /api/submissions/:assignmentId: Submissions for a specific assignment

## 4. Data Models

User:  
 - name: String  
 - email: String  
 - password: String  
 - role: "student" | "lecturer"  
  
Assignment:  
 - title: String  
 - description: String  
 - dueDate: Date  
 - createdBy: ObjectId  
 - attachments: [FileMeta]  
 - allowedFormats: [String]  
 - maxFileSize: Number  
  
Submission:  
 - assignmentId: ObjectId  
 - studentId: ObjectId  
 - file: FileMeta  
 - submittedAt: Date

## 5. Technologies

Express, Mongoose, JWT, Multer, Cors, Helmet

## 6. Security

JWT authentication, middleware protection, and role-based access control.