Practical Assignment: Push Notification System (OneSignal + Firebase)

Objective

Build a single full-stack application that demonstrates real-world push notification implementation using BOTH OneSignal and Firebase Cloud Messaging (FCM). This assignment evaluates notification token handling, backend integration, event-based triggers, and notification reliability.

Project Overview

You will build a Task Management application.

Whenever a task is created or completed, a push notification must be sent.

The SAME project must support:
- OneSignal push notifications
- Firebase Cloud Messaging (FCM)

Use an environment variable to switch between providers.

Core Features

- User login (email only)
- Create task
- Update task status
- List tasks
- Push notification on task events

Backend Requirements

Tech Stack: Node.js, Express, MongoDB

APIs:
- POST /auth/login
- POST /users/save-notification-token
- POST /tasks
- GET /tasks
- PUT /tasks/:id

Rules:
- Store notification token per user
- Trigger notification on task creation and completion
- Centralized error handling
- Use environment variables

Frontend Requirements

Tech Stack: React

Responsibilities:
- Request notification permission
- Generate OneSignal player ID or FCM token
- Send token to backend
- Task management UI
- Show permission status

OneSignal Implementation

- Initialize OneSignal SDK
- Retrieve player ID
- Backend sends notification via OneSignal REST API

Firebase Cloud Messaging Implementation

- Setup Firebase project
- Configure Firebase Messaging
- Generate FCM token
- Backend sends notification using Firebase Admin SDK

Notification Events

- Task created → "New task created"
- Task completed → "Task completed successfully"

Time Limit

8 working hours (1 day)

Submission Guidelines

- Single Git repository
- README with setup steps
- .env.example file
- Instructions to switch providers

Evaluation Criteria

Notification delivery, token handling, backend logic, code quality, error handling, and completeness