**FUNCTIONAL AND NON FUNCTIONAL REQUIREMENTS DOCUMENT**

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**Project Name:** Digital Learning Platform

**1. Introduction**

This document outlines the functional and non-functional requirements for the Educational Platform Enhancement project, aimed at improving the digital learning experience for both students and teachers through enhanced features and tools.

**2. Functional Requirements**

**2.1 Assignment Management**

**Requirement**: Teachers must be able to manage assignments directly on the platform.  
**Details**:

* **Upload Assignments**: Teachers can upload assignments directly to the platform, simplifying the task distribution process.
* **Set Deadlines**: Teachers can assign due dates to ensure students are aware of deadlines.
* **Organized Distribution**: The system organizes assignments to maintain a structured learning environment.

**2.2 Result Metrics**

**Requirement**: Students should have access to a visual overview of their performance.  
**Details**:

* **Score Visualization**: Display student scores for individual assignments using a bar graph for easy comparison.
* **Course-Specific Analysis**: Allow students to view detailed performance metrics within specific courses, helping them track their progress effectively.

**2.3 Resource Support**

**Requirement**: The platform must provide comprehensive resource support for students.  
**Details**:

* **Upload Study Materials**: Teachers can upload lecture notes, reading lists, and supplementary content directly to the platform.
* **Enhanced Learning**: Resources are curated to support and enhance the learning experience, ensuring students have all necessary materials.

**2.4 News Section**

**Requirement**: A section for updates and announcements is required.  
**Details**:

* **Announcements**: Provide a centralized area for news, updates, and announcements relevant to students and teachers.

**2.5 AI Doubt Solver**

**Requirement**: Implement an AI tutor to assist students with their queries.  
**Details**:

* **Interactive Query Resolution**: The AI tutor allows students to ask questions and receive immediate responses, improving understanding and clarity.
* **Enhanced Engagement**: Facilitates interactive learning by allowing students to freely engage and ask questions they might hesitate to ask in a traditional setting.

**2.6 Professor Resources**

**Requirement**: Provide a dedicated space for professors to manage their resources and materials.  
**Details**:

* **Resource Management**: Professors can upload, update, and manage course materials and resources efficiently.

**3. Non-Functional Requirements**

**3.1 Usability**

**Requirement**: The platform must be user-friendly and intuitive for all users.  
**Details**:

* **Intuitive Interface**: Designed for ease of use, ensuring both tech-savvy and non-tech-savvy users can navigate effortlessly.
* **Cross-Platform Accessibility**: Optimized for use on both desktop and mobile devices, ensuring accessibility from anywhere.

**3.2 Performance**

**Requirement**: The platform must perform efficiently under all conditions.  
**Details**:

* **High Responsiveness**: Quick loading times and smooth interactions, even with high user volumes.
* **Peak Load Management**: Ensures stability and speed during peak usage times, such as assignment deadlines.

**3.3 Reliability**

**Requirement**: The platform should ensure maximum uptime and dependability.  
**Details**:

* **High Availability**: Robust infrastructure to minimize downtime, particularly during critical academic periods.
* **Dependable Operation**: Continuous availability supports trust in the platform for important academic tasks.

**3.4 Scalability**

**Requirement**: The platform must be scalable to accommodate growth.  
**Details**:

* **Support for Growth**: Capable of handling an increasing number of users, resources, and data without degradation in performance.
* **Flexible Architecture**: Supports both horizontal and vertical scaling to adapt to changing demands.

**3.5 Interoperability**

**Requirement**: The platform must integrate seamlessly with other systems.  
**Details**:

* **Cross-Platform Compatibility**: Ensures compatibility with various operating systems, browsers, and devices.
* **Multilingual Support**: Offers multiple language options to cater to a diverse user base.
* **Integration Capabilities**: Facilitates easy integration with other educational tools and platforms for a connected learning experience.

**4. Tech Stack**

**1. Front End**

* HTML
* CSS
* JavaScript
* TypeScript
* Angular

**2. Back End**

* Java
* Spring Boot

**3. Database**

* MySQL