



## Project Phase II

Topic:

System Requirements

Submitted by:

Name	Roll No
Zainab Eman	22F-3738
Noor Fatima	22F-3634
Imama Kainat	22F-3661

Submitted to:

Sir Sajid Anwar

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## System Requirements

### Functional Requirements:

#### 1. User Authentication and Authorization:

- Users must be able to create accounts and log in securely.
- Teachers should be able to create and manage classes.
- Students must be able to join classes and access learning materials.

#### 2. Personalized Learning Paths:

- The system shall provide tools for teachers to create personalized learning paths for each student based on their needs and abilities.
- Students should be able to view their learning paths and progress.

### 3. Real-time Feedback:

- Teachers must be able to provide real-time feedback on students' assignments and assessments.
- Students should receive notifications and feedback in a timely manner.

### 4. Collaboration Tools:

- The system shall offer collaborative features, such as discussion boards and group projects.
- Users should be able to interact with each other and teachers through messaging and chat.

### 5. Content Accessibility:

- Learning materials, including documents, videos, and assignments, should be accessible from anywhere with an internet connection.
- Content should be organized and easy to search.

### 6. Assessment and Grading:

- The system must allow teachers to create quizzes and assessments.
- Students should receive automated grades and performance reports.

## Non-Functional Requirements:

### 1. Performance:

- The system must respond to user interactions within 2 seconds.
- It should support a concurrent user load of at least 1000 users.

### 2. Security:

- User data and learning materials must be stored and transmitted securely.
- The system should be resistant to common security threats such as SQL injection and cross-site scripting.

### 3. Scalability:

- The system must be scalable to accommodate future growth.

- It should handle an increasing number of users and courses without a significant drop in performance.

#### 4. Reliability:

- The system should have a minimum uptime of 99.9%.
- Regular backups and disaster recovery procedures must be in place.

### Quality Requirements:

#### 1. Usability:

- The user interface should be intuitive and user-friendly.
- User training should not take more than 30 minutes for teachers and students.

#### 2. Compatibility:

- Learnova should be compatible with modern web browsers (Chrome, Firefox, Safari, and Edge).
- It should work on various devices, including desktops, tablets, and smartphones.

#### 3. Maintainability:

- The system should be easy to maintain and update without causing disruptions.
- Code and database changes must be well-documented.

#### 4. Compliance:

- The system should comply with relevant education and data protection regulations, such as FERPA and GDPR.
- Accessibility standards (e.g., WCAG) must be followed for inclusive learning.

These requirements provide a comprehensive framework for the development and evaluation of the Learnova learning management system, ensuring that it functions as intended, meets performance expectations, and delivers a high-quality educational experience.

## Requirement Table