Software Requirements Specification

for

E-Learning

Version 1.0 approved

**Prepared by** **Muhmmad Nouman**

**Subhan Sadiq**

**Abdullah Basim**

**Farhan Bukhari**

<organization/group>

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Revision History

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| **Name** | **Date** | **Reason For Changes** | **Version** |
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# Introduction

## Purpose

The purpose of this document is to specify the software requirements for the E-Learning Platform, aimed at facilitating online education through the collaboration of students and expert teachers. This is version 1.0 of the Software Requirements Specification (SRS).

## Document Conventions

This document follows the standard conventions of the industry and uses plain language to convey requirements clearly. Each requirement statement has its own priority.

## Intended Audience and Reading Suggestions

This document is intended for developers, project managers, testers, and stakeholders involved in the development and deployment of the E-Learning Platform. It is organized to provide an overview of the project followed by detailed descriptions of its features, interfaces, and requirements. Readers are suggested to start with the overview sections and then proceed to the sections relevant to their roles or interests.

## Product Scope

The E-Learning Platform aims to provide an online educational environment where students can access courses taught by expert teachers. It facilitates interactive learning experiences through various features such as video lectures, quizzes, assignments, and discussion forums. The platform is designed to support a wide range of subjects and educational levels.

## References

https://github.com/Noumannomi123/E-Commerce-Project/tree/main/Phase%202

# Overall Description

## Product Perspective

The E-Learning Platform is a standalone product designed to provide an online educational environment. It is not part of any existing system but may integrate with other systems or services such as content delivery networks for video streaming.

## Product Functions

- User registration and authentication

- Browse and enroll in courses

- Access course materials (videos, documents, etc.)

- Participate in quizzes and assignments

- Feedback of the course/instructor

- Track progress and performance

## 

## User Classes and Characteristics

- Students: Individuals seeking to learn various subjects or skills.

- Teachers: Experts providing educational content and guidance.

- Administrator: Manage the platform, courses, and users.

## 

## Operating Environment

The platform will operate on a web-based environment, compatible with modern web browsers such as Chrome, Firefox, and Safari. It will require internet connectivity for access.

## Design and Implementation Constraints

- Scalability to accommodate a growing user base

- Network Connectivity may affect overall performance

## User Documentation

User documentation will include user manuals, on-demand help, and tutorials accessible within the platform. Documentation will be available in digital format and may include video tutorials.

## Assumptions and Dependencies

- Assumption: Users have basic internet literacy and access to a stable internet connection.

- Dependency: Integration with third-party services for payment processing and content delivery.

# External Interface Requirements

## User Interfaces

The user interface will be intuitive and user-friendly, following the guidelines specified in the User Interface Style Guide.

## Hardware Interfaces

The platform will interface with standard hardware components such as computers, tablets, and smartphones via web browsers (regardless of operating system restrictions).

## Software Interfaces

Integration with third-party services for payment processing and content delivery will be established through software interfaces.

## Communications Interfaces

The platform will communicate with users via email notifications for updates, reminders, and notifications.

# System Features

## System Feature 1

4.1.1 **Description and Priority**

The e-learning platform offers a comprehensive online learning experience, starting with a simple and secure registration process that allows users to create their accounts. Once registered, users can access a variety of courses created and managed by instructors. These courses include interactive content, quizzes, and assignments designed to enhance learning. The platform tracks user progress within each course, providing valuable feedback to help users stay on track. Additionally, users can engage with instructors and fellow learners through various communication tools, such as messaging and discussion forums, fostering a collaborative learning environment. Finally, the platform supports assessments and grading, ensuring that users receive timely feedback on their performance.

4.1.2 **Stimulus/Response Sequences**

* User navigates to the website and clicks on the "Sign Up" button.
* System displays a registration form asking for username, email, password, etc.
* User fills out the registration form and submits it.
* System verifies the information and creates a new user account. It then redirects the user to the login page.
* User enters their username and password and clicks on the "Login" button.
* System verifies the credentials and logs the user into their account, redirecting them to the homepage.
* Instructor logs into their account and navigates to the course management section.
* System displays a list of courses the instructor has created and an option to create a new course.
* Instructor clicks on the "Create New Course" button and fills out the course details.
* System creates a new course and adds it to the list of courses.
* Instructor selects a course from the list to manage its content.
* System displays the course content management interface, allowing the instructor to add, edit, or delete content such as lectures, quizzes, and assignments.
* User enrolls in a course and starts taking the lectures.
* System tracks the user's progress, marking lectures as completed as the user finishes them.
* User completes a quiz or assignment within the course.
* System records the user's score and progress within the course, updating the user's progress tracker.
* User accesses the course discussion forum.
* System displays the discussion forum interface, showing threads and posts from other users.
* User posts a question or comment in the forum.
* System adds the user's post to the forum, allowing other users and instructors to respond.
* User completes a quiz or assignment within a course.
* System automatically grades the quiz or assignment and provides feedback to the user.
* Instructor reviews the quiz or assignment submissions.
* System displays the submissions and allows the instructor to manually grade them, providing feedback to the students.

4.1.3 **Functional Requirements**

REQ-1: User Registration and Authentication:

Users should be able to create accounts and log in securely.

REQ-2: Course Management:

Instructors should be able to create and manage courses, including adding content,

quizzes, and assignments.

REQ-3: User Progress Tracking:

The platform should track user progress within courses and provide feedback.

REQ-4: Communication Tools:

Users should be able to communicate with instructors and other students, through

features such as messaging or discussion forums.

REQ-5: Assessment and Grading:

The platform should support assessments such as quizzes and assignments,

and provide automated grading where possible.

## System Feature 2 (and so on)

4. System Features

4.1 Course Management

4.1.1 Description and Priority

Allows administrators to create, edit, and manage courses. High priority.

4.1.2 Stimulus/Response Sequences

- Administrator logs in to the platform.

- Selects "Course Management" from the dashboard.

- Creates a new course or edits an existing one.

- Platform updates the course database accordingly.

4.1.3 Functional Requirements

REQ-1: The system shall provide forms for administrators to input course details (title, description, instructor, etc.).

REQ-2: The system shall allow administrators to upload course materials (videos, documents, etc.).

REQ-3: The system shall support categorization and tagging of courses for easy navigation.

4.2 User Authentication

4.2.1 Description and Priority

Allows users to register and authenticate their identities on the platform. High priority.

4.2.2 Stimulus/Response Sequences

- User accesses the platform.

- Selects "Register" or "Login."

- Provides necessary information for registration or authentication.

- Platform verifies the credentials and grants access.

4.2.3 Functional Requirements

REQ-4: The system shall provide registration forms for new users.

REQ-5: The system shall support authentication via email/password or social media accounts.

REQ-6: The system shall validate user credentials before granting access.

# Other Nonfunctional Requirements

## Performance Requirements

The platform shall load course materials within 3 seconds of user request under normal server load conditions.

## Safety Requirements

The platform shall encrypt user data using SSL/TLS protocols to ensure data security during transmission.

## Security Requirements

The platform shall implement user authentication mechanisms to prevent unauthorized access to user accounts and course materials.

## Software Quality Attributes

The platform shall prioritize usability and accessibility to ensure a positive user experience for all users, including those with disabilities.

## Business Rules

- Only registered users can access course materials.

- Teachers can only edit courses they are assigned to teach.

# Other Requirements

- The platform shall support multiple languages for global accessibility.

- The platform shall comply with relevant legal requirements regarding data privacy and copyright.

Appendix A: Glossary

N/A

Appendix B: Analysis Models

Already mentioned in the references section

Appendix C: To Be Determined List

TBD