Software Requirements Specification

for

E-Learning

Version 1.0 approved

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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

<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>

# 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.

**To be removed** If the SRS defines a component of a larger system, relate the requirements of the larger system to the functionality of this software and identify interfaces between the two. A simple diagram that shows the major components of the overall system, subsystem interconnections, and external interfaces can be helpful.

## Product Functions

- User registration and authentication

- Browse and enroll in courses

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

- Participate in quizzes and assignments

- Engage in discussion forums with peers and teachers

- Track progress and performance

**To be removed** A picture of the major groups of related requirements and how they relate, such as a context level data flow diagram and/or use case diagram and/or abstract class diagram, is often effective.>

## User Classes and Characteristics

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

- Teachers: Experts providing educational content and guidance.

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

<Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the most important user classes for this product from those who are less important to satisfy.>

## 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

-

<Describe any items or issues that will limit the options available to the developers. These might include: corporate or regulatory policies; hardware limitations (timing requirements, memory requirements); interfaces to other applications; specific technologies, tools, and databases to be used; parallel operations; language requirements; communications protocols; security considerations; design conventions or programming standards (for example, if the customer’s organization will be responsible for maintaining the delivered software).>

## 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.

<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>

## Hardware Interfaces

The platform will interface with standard hardware components such as computers, tablets, and smartphones via web browsers.

## Software Interfaces

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

<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>

## Communications Interfaces

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

<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>

# System Features

<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>

## System Feature 1

<Don’t really say “System Feature 1.” State the feature name in just a few words for example in flex, Student Grading is a feature.>

4.1.1 Description and Priority

<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>

4.1.2 Stimulus/Response Sequences

<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>

4.1.3 Functional Requirements

<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use “TBD” as a placeholder to indicate when necessary information is not yet available.>

<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>

REQ-1:

REQ-2:

## 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

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as detailed data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams etc.>

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>