**Assignment 1**

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Software Requirements Specification for Registration and Course Enrollment System

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| Name | Date | Reason for Change | Version |
| David Rutledge | December 16, 2024 | Initial Draft | 1.0 |
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1. Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document is purposed with defining the functional and non-functional requirements for the Registration and Course Enrollment System. This system allows users to register, create profiles, enroll in courses, manage waitlists, and access their accounts. Scheduling and management of courses will be supported across three semesters, spring, summer, and fall, annually.

1.2 Document Conventions

This document uses consistent numbering for sections and subsections.

1.3 Intended Audience and Reading Suggestions

This SRS document is intended for developers, project managers, testers, and stakeholders involved in the development and deployment of the system. Developers should focus on Sections 2 and 3 for system architecture and functionality.

1.4 Project Scope

The system facilitates user registration, secure login, and the management of course enrollments, including waitlist handling and course capacity enforcement. It aims to simplify user interactions and optimize course enrollment and allocation.

1.5 References

IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications

*Software Requirement Specification (SRS) Format*. (2023, September 20). GeeksforGeeks. <https://www.geeksforgeeks.org/software-requirement-specification-srs-format/>

Ahmad, N. (2024, May 9). *How to Write Software Requirement Specifications (SRS)*. <https://www.lambdatest.com/learning-hub/software-requirement-specifications>

2. Overall Description

2.1 Product Perspective

The Registration and Course Enrollment System is a new standalone application designed to facilitate user registration and course enrollment management. It operates independently but can integrate with institutional learning management systems (LMS) for enhanced functionality.

2.2 Product Features

* User registration
* Profile creation
* Secure login with unique credentials
* Course enrollment and scheduling
* Waitlist management
* Notifications for waitlist

2.3 User Classes and Characteristics

Students: Primary users are allowed to register, enroll in courses, and manage their profiles.

Administrators: Manage enrollment, course schedules, and user accounts.

2.4 Operating Environment

This system is a web-based platform that is compatible with modern browsers. Desktop, tablet, and mobile devices are supported.

2.5 Design and Implementation Constraints

* Enforcement of unique user IDs.
* Password storage, authentication, and security protocols must be compliant with industry and regional standards.
* Dynamic course capacity and waitlist management.

2.6 User Documentation

* User Registration Manual
* Administrator Course Management Manual

2.7 Assumptions and Dependencies

* Users will have access to an internet-enabled device.
* Third-party email services for notifications.

3. System Features

3.1 User Registration and Login

3.1.1 Description and Priority

Users can register in the system with a unique ID and password. Name, email, phone number, and additional relevant information are required to create a profile.

3.1.2 Stimulus/Response Sequences

* User enters registration details in form fields.
* System validates and creates a unique user ID.
* User logs in using their credentials.

3.1.3 Functional Requirements

REQ-1: Duplicate user IDs shall be prevented.

REQ-2: Passwords shall be validated for complexity.

REQ-3: Password recovery options shall be provided.

3.2 Course Enrollment and Waitlist Management

3.2.1 Description and Priority

Student enrollment is based on course availability. When a desired course is full, the system manages a waitlist and notifies a user if they have been promoted.

3.2.2 Stimulus/Response Sequences

* User selects a course for enrollment.
* If the course is below capacity, the user is enrolled.
* If full, the user is added to the waitlist.
* When a course has an opening, the first user on the waitlist is notified.

3.2.3 Functional Requirements

REQ-4: Maximum course enrollment limits shall be enforced.

REQ-5: Users shall be added to a waitlist if a course is full.

REQ-6: Waitlisted users shall be notified when a spot becomes available.

4. External Interface Requirements

4.1 User Interfaces

* A web-based interface with intuitive forms for registration and enrollment.
* Notification center for course status and waitlist updates.
* Administration dashboard.

4.2 Hardware Interfaces

Standard web servers with sufficient processing and storage to manage the required user and course data are required.

4.3 Software Interfaces

* Third part email services integration for notifications.
* Optional integration with Learning Management System (LMS) and other institutional services.

4.4 Communications Interfaces

Secure HTTPS communication.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The system should support simultaneous access by up to 500 users without performance degradation.

5.2 Safety Requirements

N/A

5.3 Security Requirements

* All passwords must be encrypted.
* Implement multi-factor authentication (MFA).

5.4 Software Quality Attributes

- Reliability: The system must maintain 99.9% uptime.

- Usability: The system should allow users to register in under 5 minutes.

6. Other Requirements

* ADA and WCAG Compliance.
* International language support.

Appendix A: Glossary

LMS: Learning Management System

MFA: Multi-Factor Authentication

Appendix B: Analysis Models

Course Enrollment Flow Diagram (To be developed)

Appendix C: Issues List

TBD