**Week 5 Final Project: Student Portal SRS Document**

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# 1.1 Introduction

## 1.2 Purpose

The SRS document specifies the functional and non-functional requirements for building a student registration system that addresses the problem of students enrolling in online courses, including functionality to help users manage their accounts, join waitlists, and cancel enrollment.

## 1.3 Project Scope

This project's scope includes the development of a student registration system that allows students to register for online courses. Key functionalities include new user registration, user authentication, course enrollment management, waitlist management, and course cancellation.

# 2. Overall Description

## 2.1 Product Perspective

The product is a self-contained registration platform designed to help students view and enroll in available courses and filter results by semester and availability. It is new software aimed at helping students complete and manage all elements of the enrollment process efficiently.

## 2.2 Product Features

* New user account creation using a unique ID and self-assigned password
* User profile includes key contact and demographic information, such as name, phone number, and email.
* User authentication allows users to securely log into the platform at any time using their ID and password.
* Course availability and statuses are listed by semester (spring/summer/fall).
* Course availability updates dynamically based on the maximum number of students allowed per course.
* Option to join the waitlist if the course is full, maintaining the order of users on the list.
* Option to cancel enrollment, with functionality to notify the next person on the waitlist that they are now enrolled in the course.

## 2.3 User Classes and Characteristics

* Students: Regular users who are able to login, view enrollment and course statuses, enroll in courses, join the waitlist for courses that are full, and unenroll in courses and remove themselves from waitlists.
* Instructors: Users who are able to view courses that they are instructing, the current number of enrolled students, and set the maximum number of students who may enroll in their courses.
* Admin Users: Users responsible for course management, including course availability, professor, and maximum number of students per course.
* Super Admin User: Users with virtually unlimited privileges and ownership over the registration platform can manage every aspect of the account.

## 2.4 Operating Environment

The system will run on Chrome, Firefox, Safari, and Edge web browsers and will support desktop and mobile environments on iOS, Windows, Linux, and Android operating systems.

# 3. System Features

## 3.1 New User Registration

Allows users to create an account with a unique ID and a self-assigned password, ensuring no duplicate IDs are registered.

## 3.2 Feature 1: User Profile Management

Collects key contact and demographic information, including name, phone number, and email.

## 3.3 Feature 2: User Authentication

Enables users to securely log into the platform anytime using their unique ID and password.

## 3.4 Feature 3: Course Listing and Filtering:

Displays available courses with real-time status updates.

## 3.5 Feature 4: Dynamic Course Availability:

Updates course status automatically based on the maximum number of students allowed per course.

## 3.6 Feature 5: Waitlist Management

Provides an option to join a waitlist if a course is full, and tracks the order of users on the list.

## 3.7 Feature 6: Course Enrollment Cancellation:

Allows users to cancel course enrollments and automatically notifies the next eligible user on the waitlist that they have been successfully enrolled in the course.

# 4. External Interface Requirements

## 4.1 User Interfaces

The user interface (UI) should a student dashboard that automatically updates course availability, and displays recent notifications. A clean, responsive navigation menu will appear on every screen, including buttons for the student dashboard (homepage), profile management, and logout functionality. These features will seamlessly support both desktop and mobile users.

## 4.2 Software and Communication Interfaces

The student registration system will connect with MySQL relational database for managing course availability, waitlist functionality, student information, and user accounts. MySQL will integrate with web servers like Apache or NGINX. Integration with OAuth authentication framework will handle secure user login, password validation, and session management.

## 4.3 Communications Interfaces

The system will use HTTP/HTTPS for client-server communication, and Gmail SMTP will send notifications regarding account registration, waitlist updates, and enrollment status.

# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

The student registration system should be able to handle up to 10,000 concurrent users and process search queries in under 2.5 seconds (EAB, n.d.). Real-time updates, such as class enrollments and cancellations, must be reflected in real-time. The system should maintain 99.9% uptime, especially during peak traffic, such as open enrollment.

## 5.2 Safety Requirements

The system must protect data through methods such as secure authentication, encrypted data transmission (SSL/TLS), and access control. Regular backups, session timeouts, and audit logs will maintain data integrity and security. Protection against threats like unauthorized access, malware, and SQL injection is important for system security.

## 5.3 Security Requirements

To protect sensitive information, the system will use user authentication, role-based access control (RBAC), and data encryption (SSL/TLS). Security measures like input validation, protection against threats like SQL injection and malware. Secure session management, and regular backups to ensure data integrity, confidentiality, and availability.

## 5.4 Software Quality Attributes

The system will maintain reliability, scalability, and performance via fast response times and smooth operation. Usability is a priority and is executed by the use of an intuitive interface. Maintainability is prioritized by building the system so that future updates and enhancements can be easily integrated (Khrupa, 2022). Security is prioritized by ensuring secure user authentication.

References

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