Week 1 Assignment

Gage C. Hall

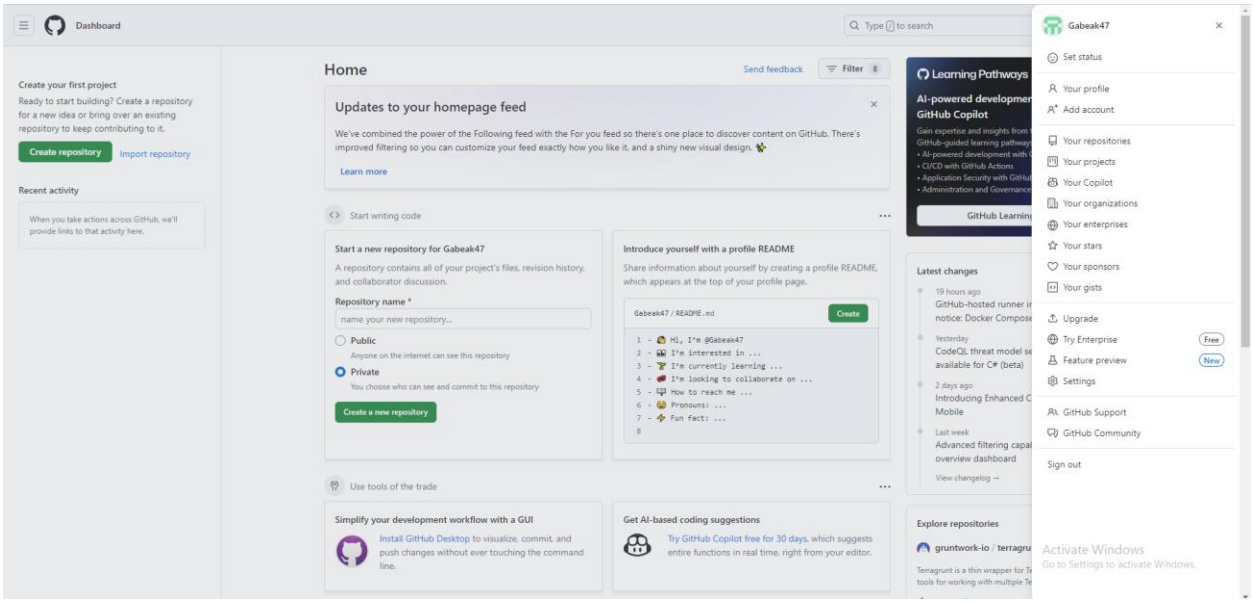
CST499: Capstone for Computer Software Technology

Joseph Rangitsch

April 13, 2024

Github Screenshot:

Link: https://github.com/Gabeak47



Software Requirements Specification

for

Class Enrollment Program

Version 1.0 approved

Prepared by Gage C. Hall

CST499 UAGC

April 13, 2024

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to provide an outline of the class enrollment program that will be developed for the CST499 final project. Students should be able to manage their classes by enrolling, start dates, and dropping classes. This SRS document should cover the full initial build of the student class enrollment system. This will include the webpage's basic features, functional and nonfunctional requirements, and more which will be described down later in this document.

1.2 Document Conventions

This SRS will have five sections in this document which will be the Introduction, Overall Description, External Interface Requirements, System Features, and Other Non-Functional Requirements.

1.3 Intended Audience and Reading Suggestions

The audience this document was intended for includes project managers, software architects, software designers, software developers, software testers, and the stakeholders it concerns for developing this project. All audience members are encouraged to read this SRS document entirely to gain a basic understanding of the project's bare concepts.

1.4 Product Scope

The project scope is to allow students to efficiently manage their class schedules, letting them create and register an account, log in and out of their account, view their current class schedule, search available class, register new classes to be added to the waitlist for classes that are already full, and drop out of a class from the list of classes. This aligns with UAGC's business scope helping faculty schedule students while also improving the student experience by increasing student enrollment by self-enrolling, which in turn, reduces overall labor for guidance counselors manually enrolling students into classes saving them time for other parts of their job.

2. Overall Description

2.1 Product Perspective

The class enrollment program is a self-contained and new project.

2.2 Product Functions

Students should be able to create, log in, log out, and register a new account. They should also be able to view their class schedule, search for available class start dates, and then register for a

class. If a class is full, they should be added to a waitlist if the class or drop out of a selected class they added to their schedule.

2.3 User Classes and Characteristics

There will be three different and unique user classes in the program. The user classes will be student, registrar, and administrator. The student class will be allowed to create an account, log into or out of the account, view class schedules, search for class that are available, register classes, and drop classes. The registrar class needs to be able to add, update, or remove classes that are available or not available from the list of class that students can select. The administrator class needs access to all functions, help other users with logging into their accounts or reset their login information and manage student IDs to assist with scheduling classes.

2.4 Operating Environment

Cross-platform will be integrated in development to allow most major web browsers for computers and mobile devices.

2.5 Design and Implementation Constraints

After implementation, UAGC will be responsible for the systems which will include the maintainability, modifiability, and testability. 5 weeks is the timeframe for the project build as it is. The project must abide by ADA web accessibility (ADA, 2007), Family Education Rights and Privacy Act (FERPA) guidelines to comply with school policies and utilize relational databases to support encryption for sensitive data and passwords (n.d., U.S. Department of Education).

2.6 User Documentation

Documentation for the project will aid users needing support or help when using the system.

2.7 Assumptions and Dependencies

The project does not need a budget as it will be a student developed project consisting of a one-man team. All dependencies and assumptions shall funnel through me (Gage C. Hall).

3. External Interface Requirements

3.1 User Interfaces

Each page in the class enrollment program should contain the same header, footer, and navigation bar, and each page's layout should be consistent across the program. This is because the home button on the navigation bar should be clearly visible on every page and session information should not be lost when moving to and from pages. All digital forms should provide easy to read instructions for fixing errors from data inputs.

3.2 Hardware Interfaces

The software should be able to run on all interfaces such as IOS, MAC, Windows, LINUX, ect. Also, HTTP and PHP will be primarily coded with so that requests can be handled between the client and web server and TCP for resource transfers.

3.3 Software Interfaces

Interfaces for mobile devices should be consistent as for desktop computers.

3.4 Communications Interfaces

Personally identifiable information (PII) and passwords will be secure and encrypted. A notification for suspicious login will happen if to many incorrect attempts are tried which will be emailed to the account email associated with the account username that the failed login attempts were attempted.

4. System Features

4.1 New User Account Creation

4.1.1 Description and Priority

- Priority: High
- Description: Account creation tying PII to the associated account is available as an option to a user making their way to the home page. This can be done by selecting the ‘Register’ button on screen.
- Benefit: 8

4.1.3 Functional Requirements

- User is told to login or register on the screen.
- User clicks register.
- User fills digital form & then clicks submit.
- A confirmation screen is then shown either confirming their successful completion of this or, they are prompted that they did not fill out all fields successfully and need to re-input or fix errors on the selected fields.

4.1.3 Functional Requirements

- REQ-1: Two buttons on home page for login and register.
- REQ-2: Open the registration form page when user clicks on ‘register’.
- REQ-3: When the ‘submit’ button is clicked, then information is validated and inputted into the database. If information is incorrect, the user is prompted to correct errors.
- REQ-5: User receives success message when account has been successfully created.

4.2 Login Feature

4.2.1 Description and Priority

- Priority: High
- Description: Returning users to the webpage should be able to login to the portal which will take them to the webpage homepage
- Benefit: 8

4.2.2 Stimulus/Response Sequences

- User prompted to login or register on the home page and presses login
- User enters form data.
- User selects submit.
- User receives confirmation of successful login or receives error message for incorrect data input.

4.2.3 Functional Requirements

- REQ-1: Webpage will contain two buttons on home page, one for login and one for register.
- REQ-2: Webpage will open the login form page when user clicks on 'login'.
- REQ-3: When the 'submit' button is clicked, then information is validated and inputted into the database. If information is incorrect, the user is prompted to correct errors.
- REQ-4: Webpage will provide informative messages if input does not meet requirements.
- REQ-5: User PII is verified from the database.
- REQ-6: User is given a success message when account has been successfully created.

4.3 Search classes to enroll into

4.3.1 Description and Priority

- Priority: High
- Description: Users should be able to search classes to select a start date and enroll into.
- Benefit: 7

4.3.2 Stimulus/Response Sequences

- User clicks "Register for a Class" button on the "View Class Schedule" page.
- User clicks semester from drop down menu.
- User clicks Submit.
- Users are presented with a search result list.

4.3.3 Functional Requirements

- REQ-1: Webpage should have a "Register for Class" button on the "View Class Schedule" page.
- REQ-2: Webpage should have present user a drop-down menu with semester options.
- REQ-3: Webpage should have return search results button when user hits submit.
- REQ-4: Webpage should have update search results button when new drop-down item is selected.

4.4 View Class Schedule

4.4.1 Description and Priority

- Priority: High
- Description: Users can view the class schedule from the webpage.
- Benefit: 9

4.4.2 Stimulus/Response Sequences

- User clicks 'View Class Schedule' button from the navigation bar.
- Webpage takes user to the 'View Class Schedule' page.

4.4.3 Functional Requirements

- REQ-1: Webpage should contain a ‘View Class Schedule’ button on the navigation bar.
- REQ-2: Webpage should contain ‘View Class Schedule’ button and when clicked, the user is redirected to the ‘View Class Schedule’ page.

4.5 Register a Class

4.5.1 Description and Priority

- Priority: High
- Description: Users should be able to enroll into a selected class.
- Benefit: 8

4.5.2 Stimulus/Response Sequences

- User clicks ‘Register a Class’ button on the ‘View Class Schedule’ page.
- User clicks semester from drop down menu.
- User clicks Submit.
- User is then shown the search result list.
- User clicks the register checkmark box if all desired classes in the list.
- User clicks the submit button.

4.5.3 Functional Requirements

- REQ-1: Webpage should contain a ‘Register for Class’ button on the ‘View Class Schedule’ page.
- REQ-2: Webpage should contain a user drop down menu with semester options.
- REQ-3: Webpage should return search results when user selects submit.
- REQ-4: Webpage should contain checkboxes next to classes under the ‘Register’ header.
- REQ-5: Webpage should contain a ‘Submit’ button.
- REQ-6: Webpage collects data from form when the ‘Submit’ button is selected.

4.6 Drop out of a Class

4.6.1 Description and Priority

- Priority: High
- Description: User can drop out of a selected class from a menu.
- Benefit: 8

4.6.2 Stimulus/Response Sequences

- User clicks ‘View Class Schedule’ on the navigation bar.
- User checks the “drop” checkbox next to all desired classes to drop.
- User clicks the ‘Drop Class’ button.
- User receives confirmation that they have successfully dropped the class

4.6.3 Functional Requirements

- REQ-1: Webpage should contain a ‘View Class Schedule’ button on the navigation bar.
- REQ-2: Webpage should contain a ‘View Class Schedule’ button is selected; user is redirected to the ‘View Class Schedule’ page.
- REQ-3: Webpage should contain checkmark boxes beside each class under the ‘Drop’ header.
- REQ-4: Webpage should contain a ‘Drop Class’ button.
- REQ-6: Webpage should contain confirmation message that user successfully dropped class.

4.7 Class Availability & Waitlist Feature

4.7.1 Description and Priority
- Priority: Medium
- Description: Users should be notified when a class becomes available from the waitlist.
- Benefit: 6

4.7.2 Stimulus/Response Sequences
- User logs into system.
- Webpage presents a notification for the user at the homepage to notify them that they have been enrolled for a class that they had enrolled into a waitlist for.
- User confirms notification.

4.7.3 Functional Requirements
- REQ-1: User logs into the system.
- REQ-2: Notification prompts the user at the homepage to notify the user that they have been enrolled for a class that they had enrolled into a waitlist for.
- REQ-3 User confirms notification.

4.8 User Logout Feature

4.8.1 Description and Priority
- Priority: High
- Description: Users should be able to log out of the webpage, leaving it and having to re-log into it to access any information tied to their account.
- Benefit: 9

4.8.2 Stimulus/Response Sequences
- User clicks the “Logout” button from the navigation bar.
- User logged out and session terminated.
- Webpage redirects to home page.

4.8.3 Functional Requirements
- REQ-1: Webpage should contain a “Logout” button on the navigation bar.
- REQ-2: Webpage should contain a log a user out and terminate the session when the “Logout” button is selected.
- REQ-3: Webpage should redirect the user to the home page after logging out.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Users should be able to log in relatively fast with an easy-to-use digital form that anyone could figure out on their own and search results should take no more than three seconds to come back to users to view. All ‘Submit’ buttons should have a confirmation notification of some sorts where the user will have to confirm after completion. Efficiency is key to the program running smoothly with clear communication in a timely matter of sorts too with the longest time being at most, sixty seconds which would be account creation.

5.2 Safety Requirements

All PII should be protected, passwords should be encrypted, and the webpage program needs to follow FERPA guidelines. Sessions will time out after 5 minutes of no activity

5.3 Security Requirements

PII will be secured, and credentials should be verified before a user is given access to an account.

5.4 Software Quality Attributes

The Student Class Enrollment System should follow web accessibility guidelines outlined by ADA (ADA, 2007). Also, the webpage should be easy to navigate and use, should be scalable to accommodate for increased enrollment, and the webpage should be modifiable to allow for the addition of new features.

5.5 Business Rules

Administrators should be able to retrieve a list of all students, enrollment, dropped class, and class availabilities, for reporting purposes. Administrators should have full control over the webpage program for easy access to all student records for business and customer support services,

6. Appendix A: Glossary

ADA- Americans with Disabilities Act of 1990
FERPA- Family Educational Rights and Privacy Act
HTTP- hypertext transfer protocol
PII- Personally Identifiable Information
SRS- Software Requirements Specification
TCP- transmission control protocol

7. References

ADA. (2007). Webpage Accessibility Under Title II of the ADA. Retrieved January 15, 2022 from https://www.ada.gov/pcatoolkit/chap5toolkit.htm

U.S. Department of Education. (n.d.). Family Educational Rights and Privacy Act (FERPA). Retrieved from: https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html