Week 1 Assignment: SRS Document Development and GitHub

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Introduction

The user registration and course enrollment system aims to streamline the process of user account creation, profile management, and course enrollment for an educational institution. By offering a robust solution for managing online courses across three semesters annually, this system ensures a seamless experience for students and administrators alike. Key functionalities include unique user identification, secure login, comprehensive course listings, and effective waiting list management, all designed to enhance the efficiency and responsiveness of the educational process.

Scope

This project covers the development of a system that allows new users to register, create accounts, and manage profiles securely. The system will enable users to log in using their unique ID and password, access course listings for three semesters (spring, summer, and fall), and enroll in available courses. It will also handle enrollment limits, manage waiting lists for full classes, and provide notifications for users when spaces become available. Additionally, users can cancel their course enrollments, triggering notifications for waiting list candidates. This system aims to enhance user experience, streamline administrative processes, and ensure secure data handling.

Functional Requirements

Functional requirements are essential because they outline what a system must do, providing clear guidance for design and development. They ensure the system meets user needs and expectations, helping manage scope and guiding effective testing. “The functional requirements are a good starting point for a security analysis as the requirements engineer is used to deal with them” (Fassbender et al., 2014, sec. 5.1).

1. User Registration

1.1 Unique User ID and Password

Each new user must create a unique ID and associated password during registration. The system must ensure that no two users can register with the same ID.

1.2 User Profile Creation

Upon registration, users must complete a profile with the following mandatory information:

- Name
- Phone number
- Email address
- Any other information deemed necessary

2. User Authentication

2.1 Login

Registered users must be able to log in to the system using their unique ID and password at any time. The system must validate the ID and password against the stored credentials.

3. Course Management

3.1 Course Listing

The system must support three semesters per year: spring, summer, and fall. Users must be able to view a list of courses offered during any semester. Not all courses will be available every semester.

3.2 Course Enrollment

Each course will have a defined maximum number of enrollments. Users must be able to enroll in available courses up to the maximum limit. If a course is full, users must be able to add themselves to a waiting list.

3.3 Waiting List Management

Users can join the waiting list when they try to enroll in a full course. The system must maintain a first-come, first-served order for the waiting list. When a spot becomes available, the system must notify the first user on the waiting list and allow them to enroll.

3.4 Enrollment Cancellation

Users must be able to cancel their enrollment in any course. Upon cancellation, the system must notify the first user on the waiting list (if any) of the available spot.

4. Notifications

4.1 Enrollment Confirmation

The system must send users a confirmation notification upon successful course enrollment.

4.2 Waiting List Notification

The system must notify users when they are added to a waiting list. Users on the waiting list must be notified when they can enroll in a course due to an available spot.

Non-Functional Requirements

Non-functional requirements are tough to define because they cover qualitative aspects like performance and security, which can be subjective and vary among stakeholders. Unlike functional requirements, they involve harder-to-measure attributes and often need careful, context-specific criteria to balance effectively. “A non-functional requirement is an attribute of or a constraint on a system” (Glinz, 2007, p.6).

1. Security

The system must ensure the secure storage of user credentials using encryption. User data, including profiles and course enrollments, must be protected against unauthorized access.

2. Usability

The system must provide a user-friendly registration, login, and course management interface. Notifications must be clear and provide necessary instructions for users to act appropriately.

3. Performance

The system must efficiently handle concurrent user registrations, logins, and course enrollments. Response times for user actions, including registration, login, and enrollment, must be within acceptable limits to ensure a smooth user experience.

4. Reliability

The system must be available 99.9% of the time, ensuring minimal downtime. Data integrity must be maintained, ensuring no loss or corruption of user information or enrollment records.

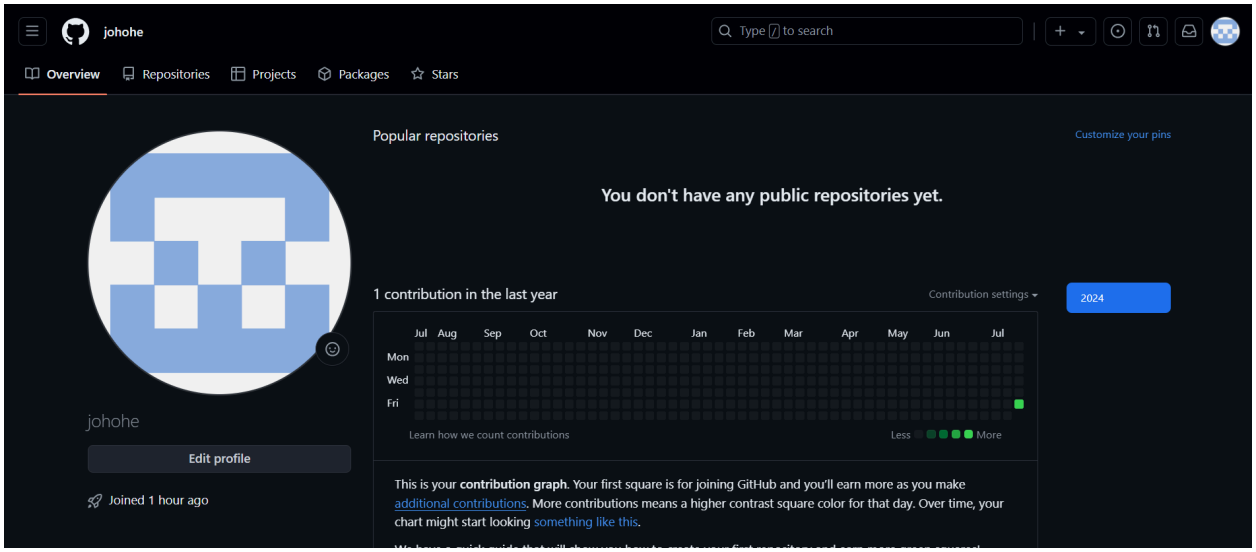
Conclusion

Implementing a user registration and course enrollment system will provide a secure, user-friendly, and efficient platform. By ensuring unique user identification, secure data management, and responsive course enrollment processes, the system will significantly improve the educational institution's overall experience and operational efficiency. This approach will foster a more organized and transparent course management environment, benefiting all stakeholders.

GitHub Account

Figure 1

GitHub Account



Note. Link to profile https://github.com/johohe

References

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