LinkedHU_CENG
System-Wide Requirements Specification

1. Introduction

The System Requirements Specification (SRS) is a document that specifies the requirements for system development. It contains both user and system requirements. It specifies the system design in compliance with the IEEE 830 standard without getting bogged down in technical jargon. With other use-case documents, test-case documents, and interface design documents, this document lays out a clear route for the system's development. The goal of this document is to outline the system quality features and the limitations that design must meet in order to provide the business goals, objectives, or capabilities.

2. System-Wide Functional Requirements

In the Use Case Definitions document, the majority of the functional requirements are captured using the use case modeling technique. This section contains system-wide functional needs that influence many use cases and/or haven't been described or can't be represented in use case descriptions.

2.1 Auditing

- ➔ The system will keep the IP addresses of the users.
- ➔ The system must keep track of a user’s sign in and sign out activities, including the date and time of the activity, the user’s username, and the IP addresses.
- ➔ The system will keep track of the deletions of posts, live events, announcements, job/scholarship/internship openings, lecture notes, videos, articles and other materials provided by academicians as well as the date and time of the deletion, the related user’s username, and the IP address.

2.2 Authentication

- ➔ In the Use Case Definitions document, the system's access control needs are detailed for each use case.

2.3 Licensing

- ➔ The system shall provide a user interface that lists the licenses of the open source software that have been used in any part of the software.

2.4 Reporting

➔ The system provides the administrator to manage the system users with ability to view the usage and registration info, approve user registration, delete and download user information via the administration panel.

2.5 Security

➔ The system shall not execute a command embedded in user-supplied data that forces the program to change database tables in unexpected ways so the system shall not be vulnerable to SQL injection attacks.

➔ The system shall store the password information of users in a hashed format using a standard hashing algorithm.

➔ The system shall encrypt the private messages sent between users with a standard encryption technique and shall store the encrypted messages.

➔ The system shall not activate or delete the user account without the administrator's approval.

3. System Qualities

System qualities are realized non-functional requirements used to evaluate the performance of a system in systems engineering. Qualities represent the URPS in FURPS+ classification of supporting requirements.

3.1 Usability

➔ The system shall provide a user manual to ease the usage of the system.

➔ The system shall have an intuitive interface, it must feel logical.

➔ The system shall provide an easy-to-understand design, that is, navigation inside the website should be obvious, users should always understand where they are, how they got there, and how to get back.

➔ The system shall provide an easy to remember interface, after not using the system for a set amount of time, the user should be able to recall how to do specific activities.

➔ The system shall ensure the user satisfaction.

3.2 Reliability

- ➔ The system must respond with high precision and accuracy in any calculation performed or in system output.
- ➔ System should be capable of addressing real-time requirements for reliable delivery and timeliness.
- ➔ The system must be available at least 99% of the time.
- ➔ System shall provide recovery from failure with the help of a cloud system.

3.3 Performance

- ➔ The system shall provide a maximum response time of 0.5s for search functionality, excluding the user's internet response time.
- ➔ The system shall provide a maximum response time of 0.3s for real-time communication functionality, excluding the user's internet response time.
- ➔ The system shall provide a maximum response time of 0.4s to populate the main page feed, excluding the user's internet response time
- ➔ The memory usage of the system shall not exceed 500MB at any time.

3.4 Supportability

- ➔ The system shall work on a web browser without any installation need.
- ➔ System shall constantly be configured after it has been deployed.
- ➔ The system shall provide a help desk for the user support.
- ➔ Also the maintenance releases will be offered to end-users once a year.
- ➔ The system shall scale with ease, up to a certain size, with the help of a cloud system.

4. System Interfaces

4.1 User Interfaces

4.1.1 Look & Feel

The design of the website should be simple and easy on the eyes. It is necessary to ensure that the user spends time on the site and to keep the user's curiosity alive. For this purpose, the menu has been adjusted in a way that is easiest for the user to use without going into complexity in the design.

4.1.2 Layout and Navigation Requirements

The website's logo appears on the left side of the main menu, the search field appears in the center, and icons for four alternative path options appear on the right side. Posts and announcements can be viewed on the home page. Postings such as job, internship, and scholarships are displayed on the advertisement page. On the chat page, the user can communicate with their connections. On the profile page, the user can view their profile and make various changes. With special pages for advertisements and posts, the user will be able to view the details and make comments. It has been designed for the user to handle all these ways in the most comfortable and simple way.

4.1.3 Consistency

The entire design process was planned to make the icons fit for purpose and to share the page contents in accordance with their titles. While making the design plan, it was considered from the perspective of the user.

4.1.4 User Personalization & Customization Requirements

In the system, firstly, two different designs are made for the system and the users. The system design was designed for a simple control mechanism for the administration. On the user side, although there are 3 types of roles, they are generally the same, but there are some differences in detail. These differences are due to differences in some of the powers of the roles.

4.2 Interfaces to External Systems or Devices

4.2.1 Software Interfaces

A system interface can be used for the event to take place on the Zoom platform, and another system interface can be used to display a video on the Youtube platform on the system.

4.2.2 Hardware Interfaces

There is no hardware interface in the system.

4.2.3 Communications Interfaces

There is no communication interface in the system.

5. Business Rules

5.1 Registration and Login Protocol

5.1.1 BR1 - Registration

5.1.1.1 System membership is allowed only to students, graduates and academicians at Hacettepe University Computer Engineering Department.
5.1.1.2 System membership can be made by e-mail with the extension cs.hacettepe.edu.tr.
5.1.1.3 There are 3 different roles defined for system membership. These are students, graduates and academicians. Different features are defined in the system for each role.

5.1.2 BR1 - Login

5.1.2.1 A user can have more than one e-mail address in the system. The user can log in to the system with the desired e-mail address.

5.2 Code of Conduct

5.2.1 BR2 - Slang Words

5.2.1.1 If a user in the system uses a slang word in the system, he is banned by the system. Banned user cannot participate in any event, cannot write any messages, including private conversations.
5.2.1.2 If someone in the role of student representative uses slang words in the system, they will be banned by the system. Student representative changes. The banned user cannot be a student representative again.

5.3 Privacy

5.3.1 BR3 - Password Information

5.3.1.1 The system encrypts the password information in the database for confidentiality purposes.

5.3.2 BR3 - Application Information

5.3.2.1 No information about the user will be displayed in any job postings without the user's knowledge.

6. System Constraints

- The system is a web application.
- The main software language of the system is C#.
- The interface design of the system will be done with JavaScript.
- PostgreSQL will be used for the database.

7. System Compliance

7.1 Licensing Requirements

This system was created for Hacettepe University Computer Engineering Department, and Hacettepe University Computer Engineering Department owns all of the system's rights. The system supports open source code, and the codes will be made available to the public.

7.2 Legal, Copyright, and Other Notices

The system has an open source code license. The system can be used, copied, distributed and modified by anyone. Hacettepe University Computer Engineering Department does not have any legal responsibility in all these transactions.

7.3 Applicable Standards

All data stored in the system is kept and processed in accordance with European GDPR requirements. Improvements to the system are made, and documents are created to international standards.

8. System Documentation

For system users, a user manual will be produced. This document will detail how to utilize the system, what to do if a problem arises, and answers to frequently asked questions. This document is the responsibility of the system developers.

Distribution of tasks

The System Requirements Specification document is shared between project manager (Sümeyye Meryem Taşyürek) and configuration manager (Murat Çelik).