

ICESHU4	
System-Wide Requirements Specification	Date: <09/04/2023>

# ICESHU4

## System-Wide Requirements Specification

### 1. Introduction

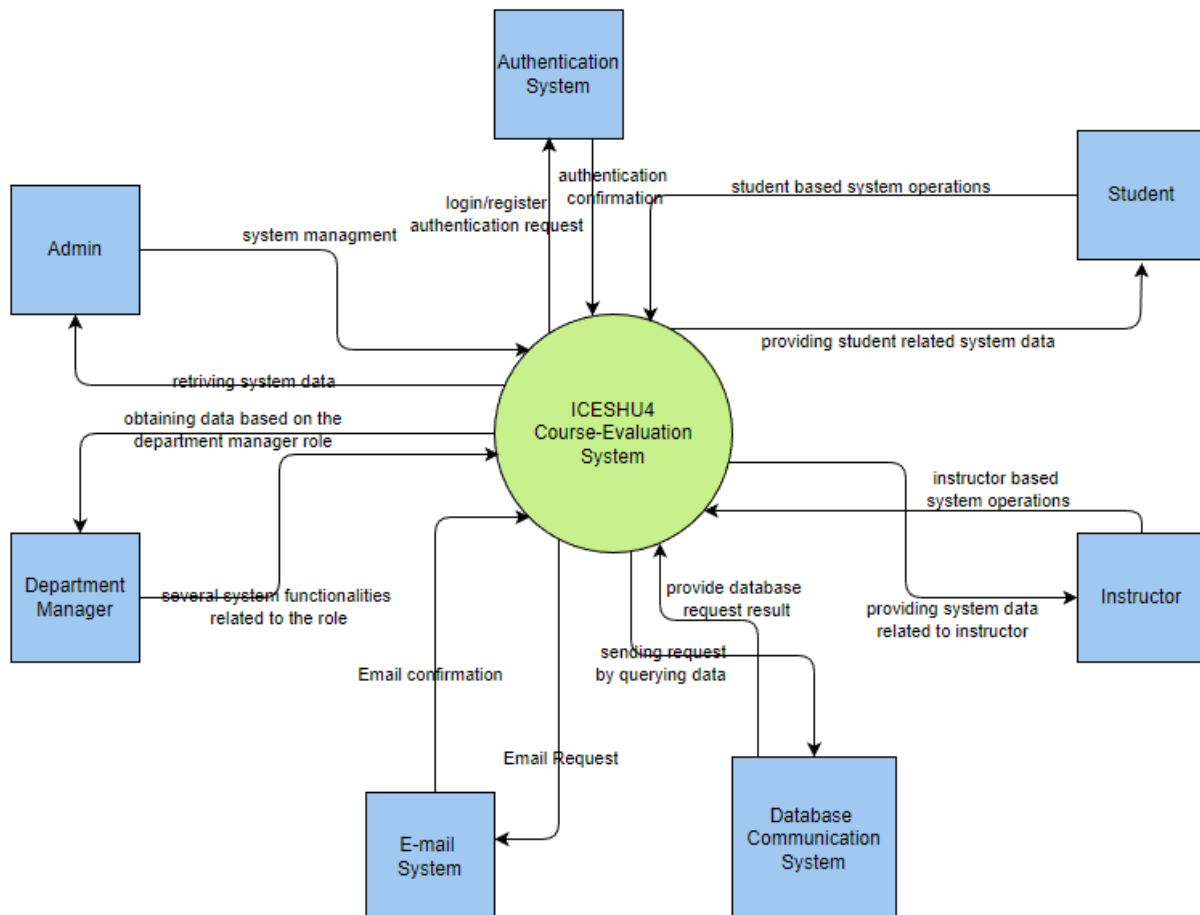
This System-Wide Requirements Specification (also referred as SRS) document outlines the software requirements for the development of our Course-Evaluation System called ICESHU4. This document details the purpose and scope of the system , functionalities and features of software and overall system structure.

The purpose of this document is to provide a good defined project scope with related objectives and expected outcomes. It defines the functional and non-functional requirements of the whole project, its qualities, constraints , user interfaces and so on.

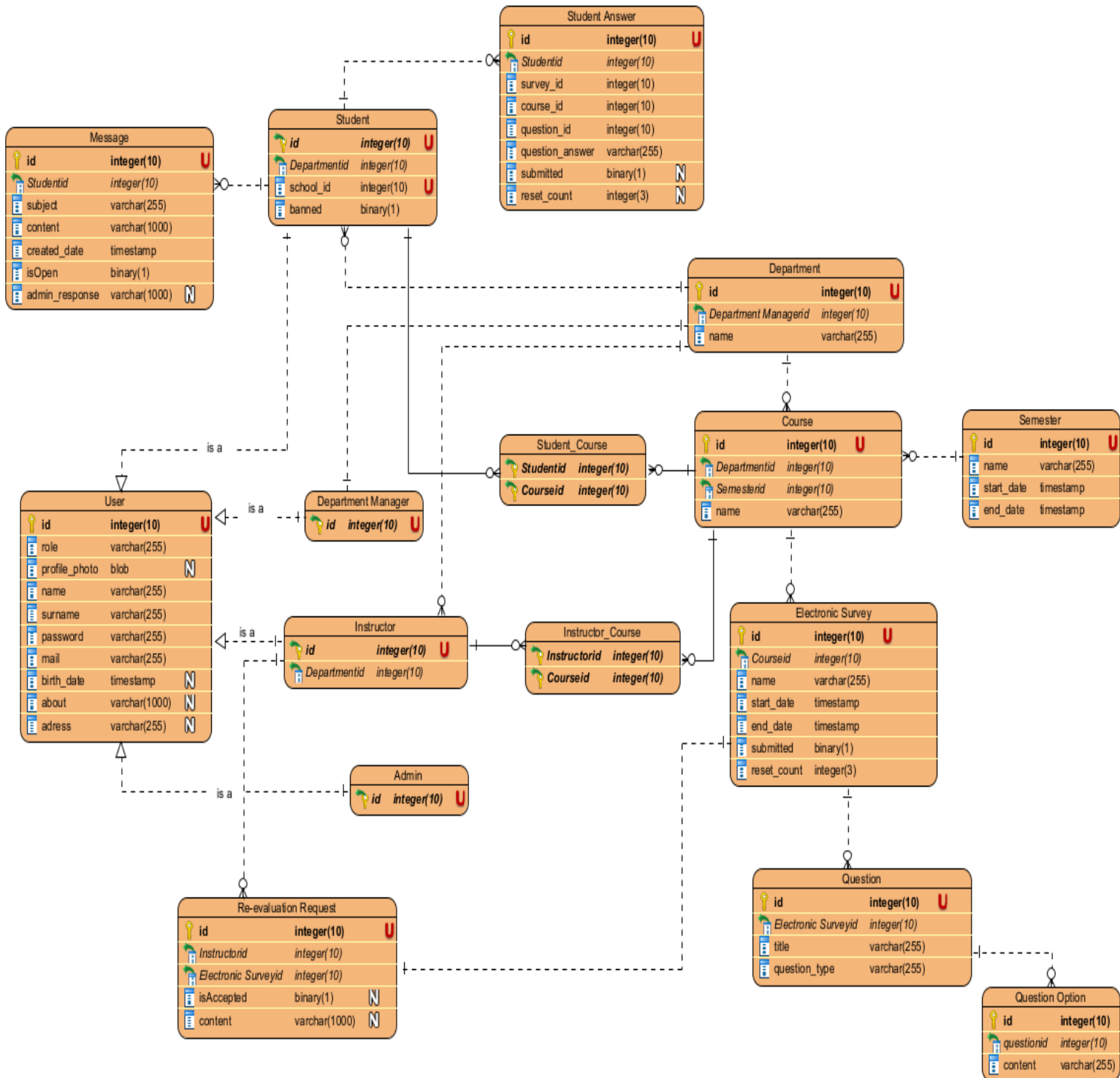
This document also comes with related attachments *Use Case Definitions* document, *Graphical User Interface Design* document and *Test Case Definitions* document which helps to identify features and functionalities of the system in detail.

### 2. System-Wide Functional Requirements

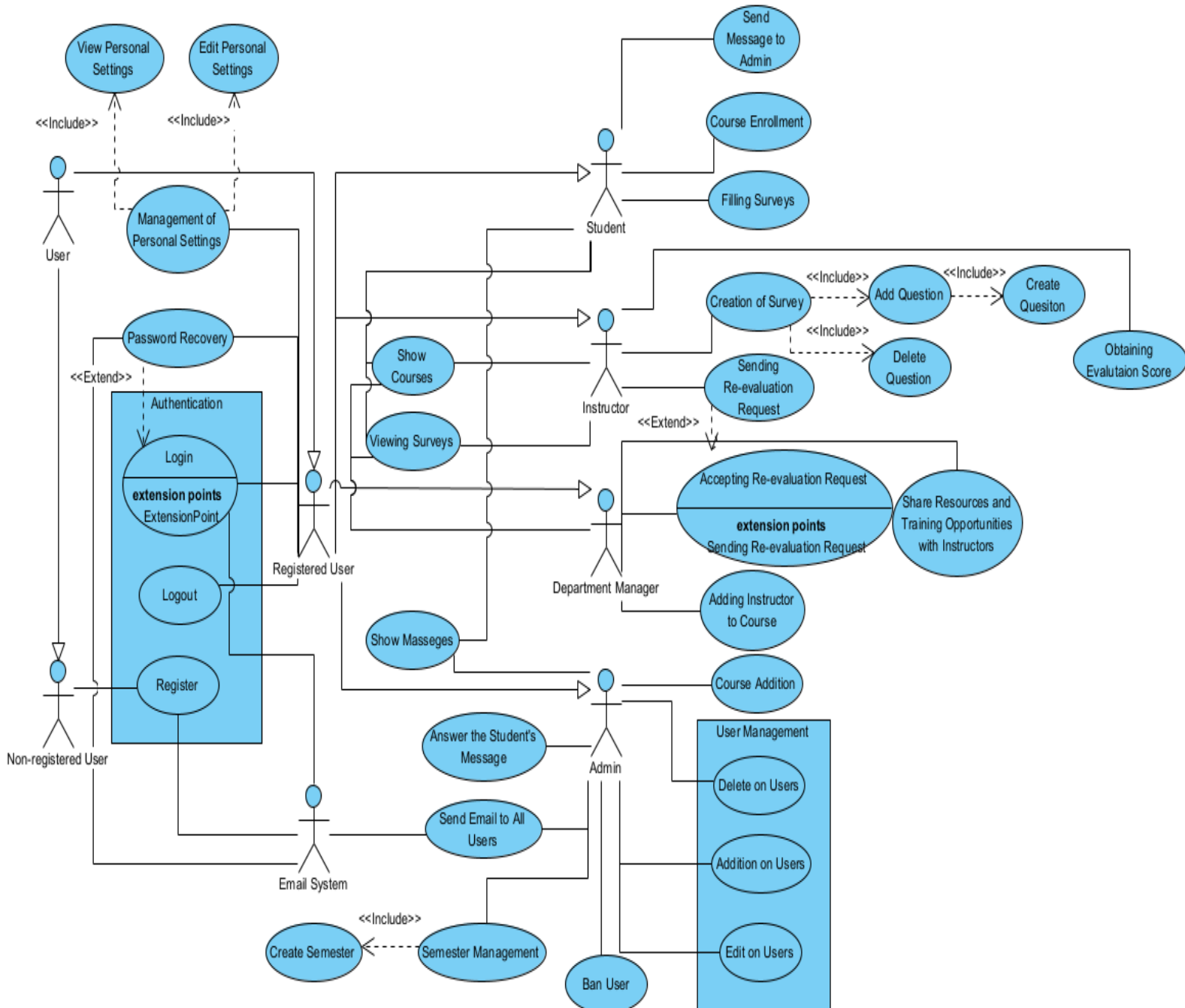
#### 2.1 Context Diagram



## 2.2 Entity-Relationship Diagram (ERD)



## 2.3 Use Case Diagram



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Use Case	Use Case Number	Use Case Code
Login	1	ICESHU4-UC1
Register	2	ICESHU4-UC2
Logout	3	ICESHU4-UC3
Password Recovery	4	ICESHU4-UC4
Course Enrollment	5	ICESHU4-UC5
Management of Personal Account Settings	6	ICESHU4-UC6
Filling Electronic Surveys	7	ICESHU4-UC7
Course Addition to the System	8	ICESHU4-UC8
Show Courses	9	ICESHU4-UC9
Adding Instructor to the Course	10	ICESHU4-UC10
Semester Management	11	ICESHU4-UC11
Creation of Electronic Surveys	12	ICESHU4-UC12
Viewing Electronic Surveys	13	ICESHU4-UC13
Sending Re-evaluation requests to Electronic Surveys	14	ICESHU4-UC14
Accepting the Re-evaluation Request of Electronic Surveys	15	ICESHU4-UC15
Obtaining Evaluation Results	16	ICESHU4-UC16
Addition on Users	17	ICESHU4-UC17
Edit on Users	18	ICESHU4-UC18
Delete on Users	19	ICESHU4-UC19
Send Message to Admin	20	ICESHU4-UC20
Show Messages	21	ICESHU4-UC21
Answer the Student's Message	22	ICESHU4-UC22
Share Resource and Training Opportunities with Instructors	23	ICESHU4-UC23
Send Email to All Users	24	ICESHU4-UC24
Ban User	25	ICESHU4-UC25

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## 2.4 System Functionalities

- **RQ1.** All users will access the system by logging in.
- **RQ2.** Unregistered students will be able to register to the system by entering name, surname, department, email and password information.
- **RQ3.** If users have trouble with their passwords, they will be able to reset their passwords via email.
- **RQ4.** A landing page will welcome users before users log in to the system.
- **RQ5.** All users should see his personal account information and manage it like editing his information , removing his profile picture etc.
- **RQ6.** Admins can add courses to the system by filling necessary course information before starting the semester.
- **RQ7.** Students shall be able to enroll courses on the system based on his/her department.
- **RQ8.** Students can fill electronic surveys opened in courses that they take and while filling the surveys, they will be able to save answers without submitting or leaving the form to do it later with saved answers..
- **RQ9.** Department managers will be able to add instructors to the courses.
- **RQ10.** All users should be able to see courses according to their roles. For example, admins can see all the courses . On the other hand, students will see the courses that s/he takes.
- **RQ11.** Admin will be the people that start and end semesters
- **RQ12.** Instructors can create electronic surveys and publish them to the courses.
- **RQ13.** All users will be able to view evaluation surveys according to their roles. In example , admins can view all the surveys while students can view only published surveys in the courses that they take.
- **RQ14.** Instructors will be able to send a re-evaluation request of the survey to the department manager if s/he thinks that there are problems with the survey results.
- **RQ15.** Department managers will be able to accept or decline re-evaluation requests.
- **RQ16.** All users will view evaluation results based on their roles. Students will see the results of evaluation surveys that they filled. Instructors will see all the student answers anonymously while admins and department managers see each student's individual results.
- **RQ17.** Admin will be able to add, edit , delete all users.
- **RQ18.** Admin will be able to ban students that use inappropriate words on their survey answers.
- **RQ19.** Students can contact admins via messages if they have a problem.
- **RQ20.** Students and admins can list their messages.
- **RQ21.** Admins can respond to student messages and mark them as solved.
- **RQ22.** Admin will be able to send emails to all users by using only one merged email.
- **RQ23.** Department Managers shall be able to share resources with instructors via uploading to the system.

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## **2.5 Authentication**

- User access to the system will be managed by the system. Only the signed-up users can use the system.
- ICESHU4 does not provide functionalities for unsigned users.

## **2.6 Security**

- User information should be stored in the database securely.
- Password text should be hashed by an appropriate hashing algorithm and stored in the database as hashed.
- Databases should be unavailable by unauthorized users. So database information retrieving should be done by access tokens.

## **2.7 Scheduling**

- The system will send pre-survey announcement emails to users 2 days before evaluations start.
- The system will send announcement emails to users 4 days and 2 days before evaluations close.

## **2.8 Licensing**

- The system should list licenses of the open source softwares that is used in development of the systems.

## **2.9 Reporting**

- The system will provide statistical data of evaluation forms as different types of charts and downloadable excel files.

## **2.10 Auditing**

- The system shall keep the record of requests and update the database according to the add, delete or edit requests.
- The system should keep the record of login and logout activities done by all users with date and IP address information.

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### **3. System Qualities**

#### **3.1 Usability**

- The system should provide user-friendly interface designs. All user types should be able to easily adapt to the usage of the system without any help in a short time period.
- The system notifications and messages should be understandable. Users should understand them without any contact with the admin.
- The system should have a clear localization design. All user types should be able to quickly and effortlessly locate what they need in the program.
- The system interfaces should be easily remembered by the users. There shouldn't be a learning process at every entrance to the system.

#### **3.2 Reliability**

- The system should provide high accuracy about survey results calculation.
- The system should be available 7/24 for all user types.
- Even if the system is busy, it should be able to still respond to the users' requests to provide system integrity.

#### **3.3 Performance**

- Login & Logout processes should not be more than 1 second.
- The system interface's response time should be less than 2 seconds in the standard conditions excluding users' internet response time.
- The system interface's response time should be less than 5 seconds in the nonstandard conditions excluding users' internet response time.
- The memory usage shouldn't exceed 500 MB.

#### **3.4 Supportability**

- The web application can work on any web browser without an additional installation process.
- The system will be adaptable to the new technologies and in the maintenance phase, all upgrading should be done without any problem.
- The system should be scalable in the long term. When the user count increases enormously, the system should not crash.
- The system will have a help desk for users. Users will be able to create a request according to their needs from the help desk, and Admin will respond to their requests.

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## **4. System Interfaces**

### **4.1 User Interfaces**

#### **4.1.1 Look & Feel**

In the system interfaces, a purple-weighted design will be used to represent the Hacettepe University. Users will feel that they are using modern and simple web applications.

#### **4.1.2 Layout and Navigation Requirements**

The main layout is stable for all user types. On the left side there will be sections to view such as courses,teaching,semester,survey,users. These sections will be available to the appropriate users according to their authorization. In the remaining part of the page we will see the content of these sections. For instance, if we select the “Courses” from the left side as a student, we will see all the courses that we have taken so far at the remaining part of the section. In the up-right side of the page there will be buttons to go to the profile and settings. By clicking these buttons you can reach the options such as logout/my profile.

#### **4.1.3 Consistency**

The design will be predictable. When a user clicks on any button, he/she will view the expected page. This type of design will decrease confusion on the users.

#### **4.1.4 User Personalization & Customization Requirements**

All user types will have different functionalities and personalized page layouts. Therefore, the system will conduct authorization operations. Only permissioned users will be able to see the content of the related page. Also, there will be dark mode in the system and if users want, they can change the theme.

### **4.2 Interfaces to External Systems or Devices**

#### **4.2.1 Software Interfaces**

There will not be any external software integrated with this system. Therefore there are not any software interfaces with external softwares.

#### **4.2.2 Hardware Interfaces**

There is no hardware interface in this web application.

#### **4.2.3 Communications Interfaces**

The system will be running on web browsers with internet connection by using HTTP/HTTPS protocols. There are not any other devices to communicate with. Therefore there is no other communication interface in this system.



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## **5. Business Rules**

### **5.1 Registration & Login**

- Students can register to the system by using their e-mail addresses with university domain. Instructors and Department Managers will get their account information from Admin by e-mail. All users can login to the system by using their passwords and university e-mail address.

### **5.2 Postponement**

- Students can click the “Do It Later” button on surveys two times. After that, they should complete the answer on the survey and submit it.
- Instructors can click the “Do It Later” button on surveys three times. After that, they should complete the survey creation and submit it.

### **5.3 Avoid Insulting**

- If Admin sees the inappropriate answers in the surveys, he/she can ban the student who has answered in that way. Banned students cannot enter the system again.

### **5.4 Semester**

- Semester start-end dates will be setted. Surveys of the semester lectures can be opened only if the semester is open.

### **5.5 Survey**

- Students can fill the survey if only they take the course of that survey.

### **5.6 Privacy**

- Instructors will not be able to see which answer belongs to which student for anonymity.

## **6. System Constraints**

The system will be a web application. The project will be developed by using Java and TypeScript programming languages. For the backend development, Spring Boot and Maven will be used. Frontend will be developed by using Angular. PostgreSQL will be used for the database operations.

## **7. System Compliance**

### **7.1 Licensing Requirements**

- Entire development processes will be conducted privately by the Cyberbullies team members. After the project release phase, all project source codes will be published on GitHub publicly.

### **7.2 Legal, Copyright, and Other Notices**

- All of the copyrights will belong to Cyberbullies Company Limited.

### **7.3 Applicable Standards**

- In the development phase, KVKK standards will be taken into account for the users' data privacy.

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## 8. System Documentation

The program will be as user-friendly as possible, but also system documentation will be available in case users encounter any common issues. In the system documentation, all common problems and their solutions will be listed. Users can search for their problem in that problem list and find solutions.

## 9. Traceability of Requirements to Use Cases

	USE CASE NUMBER																									
R E Q U I R E M E N T  N U M B E R		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	1	X																								
	2		X																							
	3	X			X																					
	4	X																								
	5						X																			
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	22																								X	
23																								X		

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## 10. Traceability Table

Traceability Table	Umut Güngör	Numan Kafadar	Mustafa Çağrı Korkmaz	Yunus Emre Terzi	Osman Faruk Derdiyok
Introduction		X			
Context Diagram		X			
Entity Relationship Diagram		X	X		
Use Case Diagram				X	
System-Wide Functional Requirements		X			
System Qualities			X		
System Interfaces			X		
Business Rules			X		
System Constraints			X		
System Compliance			X		
System Documentation			X		
Traceability of Requirements of Use Cases	X	X	X	X	X