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**Course:** Software Development Practice (SWE 573)

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**Project Name:** Learn Together (Co-Learning Platform)

**Git Repository:** <https://github.com/erdembilgin/SWE-573-Project>

**Git Tag Version:** v0.9

**Deployment URI:** <http://54.163.54.195/>

**Test User Information:**

- Mail: [erdem.bilgin@boun.edu.tr](mailto:erdem.bilgin@boun.edu.tr)
- Password: Proje123

## **HONOR CODE**

Related to the submission of all the project deliverables for the Swe573 2022 Spring semester project reported in this report, I Hasan Erdem Bilgin declare that:

- I am a student in the Software Engineering MS program at Bogazici University and am registered for Swe573 course during the 2022 Spring semester.

- All the material that I am submitting related to my project (including but not limited to the project repository, the final project report, and supplementary documents) have been exclusively prepared by myself.

- I have prepared this material individually without the assistance of anyone else with the exception of permitted peer assistance which I have explicitly disclosed in this report.

Hasan Erdem Bilgin

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## **Project Overview**

Learn Together is a website which is developed for people to create learning spaces for specific topics and generate relevant content under these learning spaces. Thereby, all the users, who are interested in this space topic, can read and benefit from this content. Moreover, they can also interact with the contents by commenting or liking/disliking. People will need to create profiles to create spaces and contents. Only logged in users will be able to create contents for the spaces that have joined.

## **Software Requirement Specification**

### **A) Sign Up and Login Flow**

1. Users shall be able to sign up with a nickname, an e-mail address, a password, and an avatar.
2. Users shall be able to login by using their e-mail addresses and passwords.
3. Users shall request their current password to their e-mail addresses if they forgot their password.
4. Users shall be able to logout from the system.
5. System shall check for the uniqueness of the e-mails and nicknames and shall not allow users signing up with an existing e-mail address or nickname.

### **B) Profile Page**

6. Users shall have a profile page.
7. Users shall be able to view other users' profile pages.
8. Profile pages shall contain username, avatar, email, password, bio, interested areas, reputation, joined spaces and taken quizzes.
9. Users shall be able to edit their username, bio, avatar, email and password.

### C) Spaces and Contents

10. Users shall be able to create spaces for a desired subject.
11. Users shall determine space name, space description and subject tags related to that area while creating a new space.
12. Users shall be able to join a space.
13. Users shall be able to create posts inside the spaces they have joined or created.
14. Users shall be able to comment for a post, if they have joined to the space where this post is shared.
15. Users shall be able to like or dislike a post and give reputation star to the content creator user if they have joined to the space where this post is shared.
16. Users shall be able to create text-based posts, posts with videos and posts with images.
17. Users shall be able to create quizzes with multiple choice answers.
18. Users shall be able to take quizzes that are created by other users.
19. Users shall select what type of post they want to create from a dropdown list while creating a new post.
20. Text based posts shall have a title and a description text.
21. Video posts shall have a title, a description text, and a video.
22. Image posts shall have a title, a description text, and an image.
23. Quizzes shall have questions with multiple-choice answers.
24. While creating a post, users shall select subject tags that are related to this post.
25. Users shall be able to add prerequisite subjects and subject related tags to their posts.
26. Users shall be able to edit any posts.
27. Posts shall have an edit history and all users shall be able to view the edit history.
28. Only post owner users and admin users shall be able to delete a post.
29. Admin users shall be able to delete a space, a post, or a comment.
30. Users shall be able to position a content as a following of another content or ahead of another content.

#### 4. Discussion Rooms

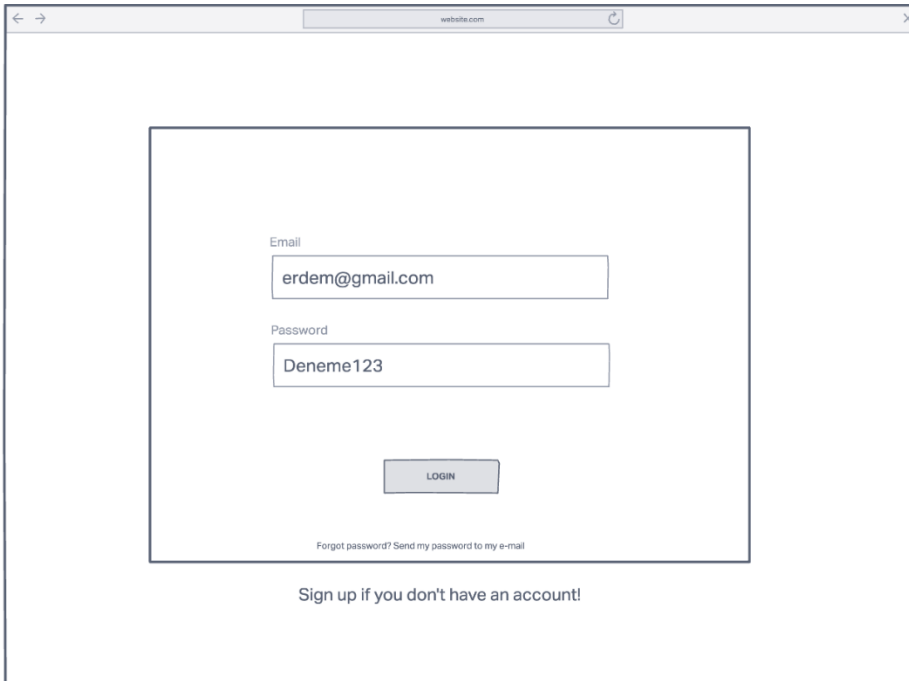
- 31. Users shall be able to join discussion rooms.
- 32. Each discussion room shall have a title and a description.
- 33. Users shall be able to talk and write on a whiteboard while being in a discussion room.
- 34. Users shall be able to delete only their own contents.
- 35. Users shall be able to leave the room.

#### 5. Quizzes Page

- 36. Users shall be able to create quizzes.
- 37. Users shall be able to view the results of their taken quizzes.
- 38. Users shall be able to view how many other users completed the quizzes that are created by them.
- 39. Users shall be able to search for a quiz by the name of the quiz.
- 40. Users shall be able to attempt a quiz.

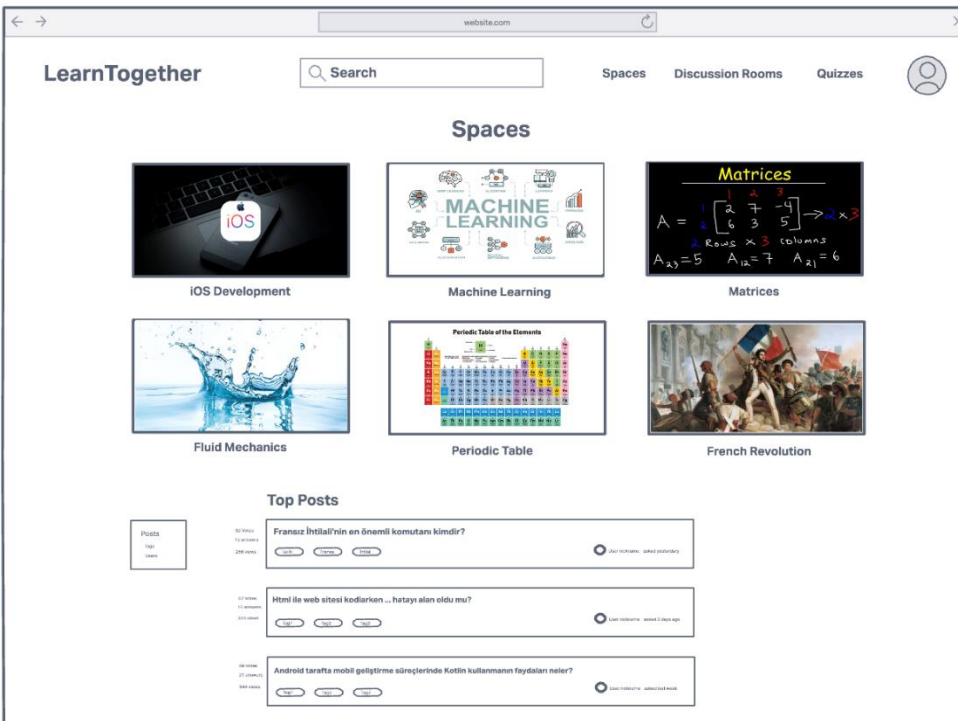
## Design (Software & Mockups) – UML Diagrams and Images

### Login Page



A browser window mockup showing a login page. The browser's address bar contains 'website.com'. The login form is centered and contains an 'Email' field with 'erdem@gmail.com', a 'Password' field with 'Deneme123', and a 'LOGIN' button. Below the button is a link that says 'Forgot password? Send my password to my e-mail'. At the bottom of the form area, it says 'Sign up if you don't have an account!'.

### Homepage



A browser window mockup showing a homepage for 'LearnTogether'. The browser's address bar contains 'website.com'. The page has a header with the 'LearnTogether' logo, a search bar, and navigation links for 'Spaces', 'Discussion Rooms', and 'Quizzes'. A user profile icon is in the top right. The main content area is titled 'Spaces' and features a grid of six topic cards: 'iOS Development' (with an iPhone image), 'Machine Learning' (with a diagram), 'Matrices' (with a handwritten matrix equation), 'Fluid Mechanics' (with a water splash image), 'Periodic Table' (with a periodic table image), and 'French Revolution' (with a historical painting). Below the grid is a 'Top Posts' section with three post cards. Each card shows a title, a date, a view count, and a 'Post' button. The first post is titled 'Fransız İhtilali'nin en önemli komutanı kimdir?' and has 26 views and 12 likes. The second post is titled 'Html ile web sitesi kodlarken ... hatayı alan oldu mu?' and has 17 views and 14 likes. The third post is titled 'Android tarafta mobil geliştirme süreçlerinde Kotlin kullanmanın faydaları neler?' and has 14 views and 27 likes.

## Profile Page

LearnTogether

Search

Spaces

Discussion Rooms

Quizzes

< Homepage

avatar

23 following 146 followers

Profile Bio

username :  
e-mail :  
password :  
reputation :  
areas :

EDIT

Spaces

<

IOS Development

MACHINE LEARNING

Matrices

>

Quizzes

<

IOS Development

Grade: %76

Machine Learning

Grade: %98

Matrices

Grade: %65

>

LOGOUT

LearnTogether

Search

Spaces

Discussion Rooms

Quizzes

Create a Space

Title

Description

Banner

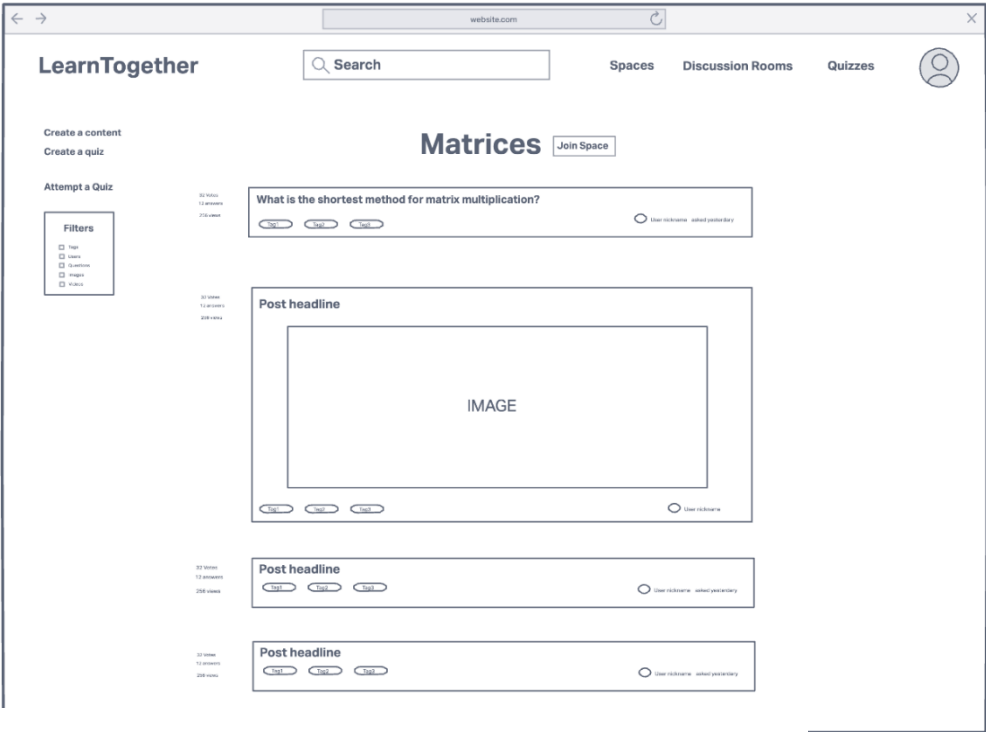
Space Tags

Tag1 Tag2 Tag3

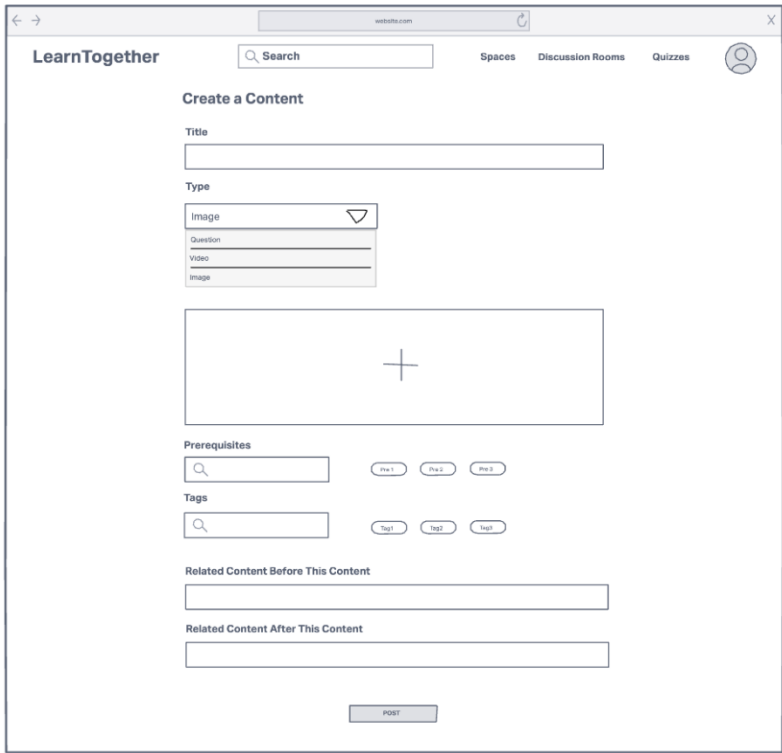
CREATE



Space Page



New Content Page



## Content Detail Page

LearnTogether

Search

Spaces

Discussion Rooms

Quizzes

SPACE'DÖN

32

11

Prerequisites

Calculus

Matrices

Limit

Integral nedir ne işe yarar?

VIDEO

Calculus

İçerik

1. Limit

2. Türev

3. **Integral**

4. Differensiyel Denklemler

Yorumlar

Videonun 3. dk'sında anlatılan konsepti tam anlamadım bu konuda yardımcı olabilecek var mı?

Yanıtla

atm12123

Integral konusunu çok net şekilde oturtmamı sağladı, videoyu hazırlayanlara teşekkürler.

Yanıtla

matmatbulun

Türev konusundaki video gibi bu da çok açıklayıcı olmuş.

Yanıtla

tasarimci2020

PREVIOUS

NEXT

Önerilenler

Limit Süreklilik Türev ilişkisi

Fonksiyonlar ve Uygulamaları

Suggestion 3

Suggestion 4

9

## Comment Detail Page

LearnTogether

Search

Spaces

Discussion Rooms

Quizzes

İÇERİĞE GERİ DÖN

Sırala

☐ En Yeni

☐ En Faydalı

Yorumlar

X

Videonun 3. dk'sında anlatılan konsepti tam anlamadım bu konuda yardımcı olabilecek var mı?

ahmet123

X

Videonun 3. dk'sında anlatılan konsepti tam anlamadım bu konuda yardımcı olabilecek var mı?

Yanıtla

aytemur12

X

Anladığım kadarıyla hoca orada grafiğin altında kalan alan ile integral hesabı arasındaki bağlantıyı açıklıyor.

Yanıtla

elazizyaman7

X

Evet aslında burada kanıtlamaya çalıştığı şey fonksiyon grafiğinin altındaki alan ile integral arasındaki bağ.

Yanıtla

temizcan1

X

Hocanın bu konudan sonra anlattığı denklem hesabı ile ilgili buradaki bilgi çelişiyor gibi?

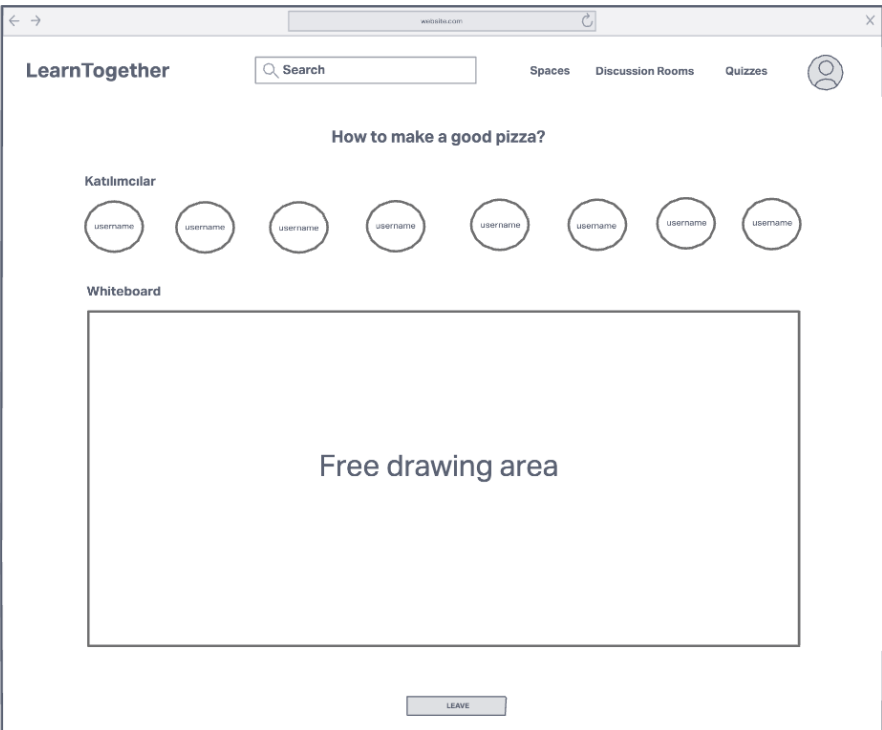
Yanıtla

huzarada

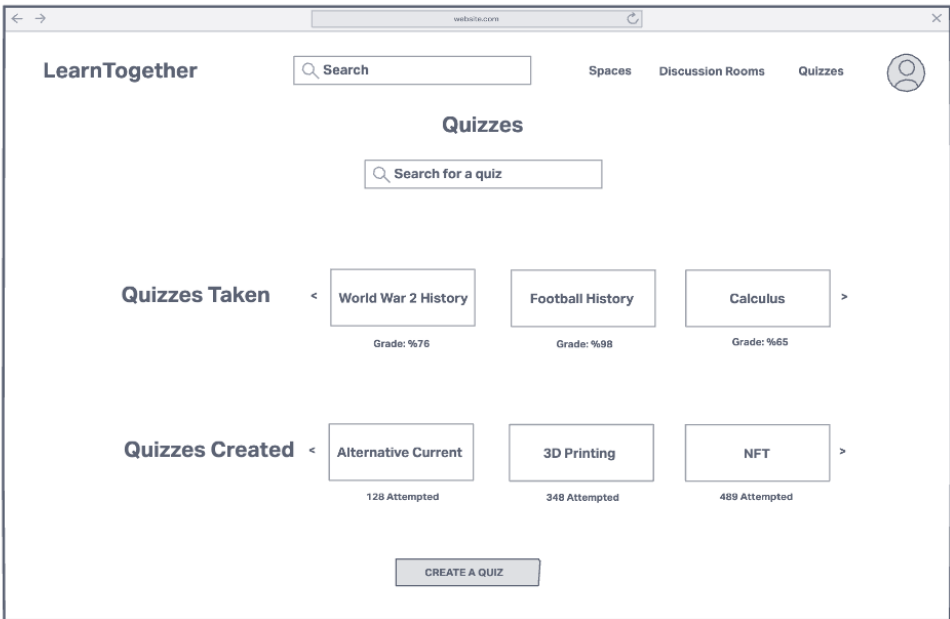
Yorum Yaz

Ben bu videonun sonunda anlatılan problem çözümü ile ilgili şöyle düşünüyorum ....

Discussion Room



Quizzes Homepage



## Quiz Detail Page

The screenshot shows a web browser window with the URL 'website.com'. The page header includes the 'LearnTogether' logo, a search bar, and navigation links for 'Spaces', 'Discussion Rooms', and 'Quizzes'. A user profile icon is in the top right. Below the header, there is a back arrow and the text 'All Quizzes'. The main title is 'Football History Quiz'. The quiz content is displayed in a scrollable box with two questions:

1. Who is the first professional player of the world?
  - ☐ Pele
  - ☐ Romario
  - ☐ Maradona
  - ☐ Platini
2. Who is the most scorer football player of all time?
  - ☐ Pele
  - ☐ Romario
  - ☐ Maradona
  - ☐ Platini

Below the scrollable box are two buttons: 'ATTEMPT' and 'DONE'.

## Quiz Results Page

The screenshot shows the same web browser window as the previous one, but the quiz content area now displays a result message:

You answered 11 of 20 questions correctly!

Below this message is a 'RETAKE' button.

New Quiz Page

← →

website.com

✕

LearnTogether

🔍 Search

Spaces

Discussion Rooms

Quizzes

👤

⏪ All Quizzes

Title

Football History Quiz

Question 1

Who is the most scorer football player of all time?

Answers

☒ Pele

Correct

☐ Maradona

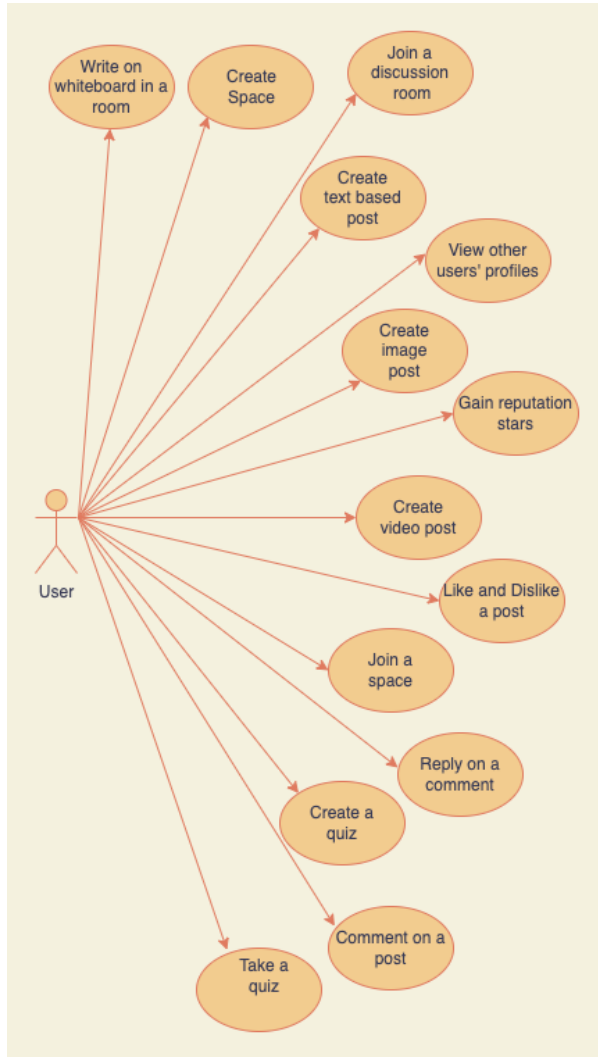
☐ Write an answer

☐ Write an answer

ADD QUESTION

CREATE

## Use Case Diagram



## Status of Project

### A) Sign Up and Login Flow

- ✓ Users shall be able to sign up with a nickname, an e-mail address, a password and an avatar.
- ✓ Users shall be able to login by using their e-mail addresses and passwords.
- ✓ Users shall request their current password to their e-mail addresses if they forgot their password. **(Not completed)**
- ✓ Users shall be able to logout from the system.

- ✓ System shall check for the uniqueness of the e-mails and nicknames and shall not allow users signing up with an existing e-mail address or nickname.

## B) Profile Page

- ✓ Users shall have a profile page.
- ✓ Users shall be able to view other users' profile pages. **(Not completed)**
- ✓ Profile pages shall contain username, avatar, email, password, bio, interested areas, reputation, joined spaces and taken quizzes. **(Partially completed)**
- ✓ Users shall be able to edit their username, bio, avatar, email and password.

## C) Spaces and Contents

- ✓ Users shall be able to create spaces for a desired subject.
- ✓ Users shall determine space name, space description and subject tags related to that area while creating a new space.
- ✓ Users shall be able to join a space.
- ✓ Users shall be able to create posts inside the spaces they have joined or created.
- ✓ Users shall be able to comment for a post, if they have joined to the space where this post is shared.
- ✓ Users shall be able to like or dislike a post and give reputation star to the content creator user if they have joined to the space where this post is shared. **(Partially completed)**
- ✓ Users shall be able to create text-based posts, posts with videos and posts with images.
- ✓ Users shall be able to create quizzes with multiple choice answers. **(Not completed)**
- ✓ Users shall be able to take quizzes that are created by other users. **(Not completed)**
- ✓ Users shall select what type of post they want to create from a dropdown list while creating a new post. **(Not completed)**
- ✓ Text based posts shall have a title and a description text.
- ✓ Video posts shall have a title, a description text and a video.
- ✓ Image posts shall have a title, a description text and an image.
- ✓ Quizzes shall have questions with multiple-choice answers. **(Not completed)**
- ✓ While creating a post, users shall select subject tags that are related to this post. **(Not completed)**
- ✓ Users shall be able to add prerequisite subjects and subject related tags to their posts.
- ✓ Users shall be able to edit any posts. **(Not completed)**
- ✓ Posts shall have an edit history and all users shall be able to view the edit history. **(Not completed)**
- ✓ Only post owner users and admin users shall be able to delete a post. **(Not completed)**
- ✓ Admin users shall be able to delete a space, a post, or a comment.
- ✓ Users shall be able to position a content as a following of another content or ahead of another content. **(Not completed)**



#### D) Discussion Rooms

- ✓ Users shall be able to join discussion rooms. **(Not completed)**
- ✓ Each discussion room shall have a title and a description. **(Not completed)**
- ✓ Users shall be able to talk and write on a whiteboard while being in a discussion room. **(Not completed)**
- ✓ Users shall be able to delete only their own contents. **(Not completed)**
- ✓ Users shall be able to leave the room. **(Not completed)**

#### E) Quizzes Page

- ✓ Users shall be able to create quizzes. **(Not completed)**
- ✓ Users shall be able to view the results of their taken quizzes. **(Not completed)**
- ✓ Users shall be able to view how many other users completed the quizzes that are created by them. **(Not completed)**
- ✓ Users shall be able to search for a quiz by the name of the quiz. **(Not completed)**
- ✓ Users shall be able to attempt a quiz. **(Not completed)**

### **Status of Deployment**

The project is dockerized, and it is deployed via AWS system. Website can be reached from <http://54.163.54.195/> address.

### **System Manual**

System requirements are listed below:

- Python
- Virtual environment
- The packages that are listed in the requirements.txt
- Docker
- Docker-compose
- Postgre database

Installation instructions:

1. Clone repository: `git clone https://github.com/erdembilgin/SWE-573-Project.git`
2. Create virtual environment: `virtualenv venv`

3. Activate virtual environment: `source venv/bin/activate`
4. Install dependencies: `pip install -r requirements.txt`
5. Migrate DB: `python manage.py migrate`
6. Runserver: `python manage.py runserver`
7. Navigate to url: `localhost:8000`

## **User Manual**

- Users can access to the website from this link <http://54.163.54.195/>
- Then, each user needs to create a profile with an avatar, email, nickname, and password.
- After creating a profile, user needs to enter this email and password credentials to login to the website.
- When users login to the website, they can change their password.
- After logging in, users can create spaces.
- Users need to join to a space to create a content under this specific space.
- When users joined to a space, they can create text-based, image or video contents.
- Other users that joined to this specific space can comment or like-dislike this content.

## **Unit & User Tests**

### Unit Test Example

---

```
1  from django.test import TestCase
2
3  # Create your tests here.
4
5
6  from django.test import TestCase, Client
7  from django.urls import reverse
8  import json
9  from accounts.models import User
10
11
12  class TestViews(TestCase):
13      def setUp(self):
14          print("set up is gonna execute")
15          self.client=Client()
16          self.user = User.objects.create_user(email='testuser@mail.com',password='123456')
17          self.user.set_password("123456")
18          self.user.save()
19
20      def test_spaces_homepage_GET(self):
21          self.client.login(email='testuser@mail.com', password='123456')
22          response=self.client.get(reverse('homepage'))
23          self.assertEqual(response.status_code, 200)
24          self.assertTemplateUsed(response,"spaces/homepage.html")
```

## User Tests

- Signup actions tested
- Login/logout actions tested
- Changing password tested
- Creating spaces/contents tested
- Deleting contents tested
- Commenting on posts tested
- Liking/disliking posts tested