

SWE 573 SOFTWARE DEVELOPMENT PRACTICE

FINAL REPORT

Project: wE-Learning

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HONOR CODE:

Related to the submission of all the project deliverables for the Swe573 2022 Spring semester project reported in this report, I Fatma Betül Güreş declare that:

- I am a student in the Software Engineering MS program at Boğaziçi 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.

Fatma Betül Güreş,



DECLARATION OF ANY 3RD PARTY SOFTWARE

No software was directly copied and pasted in this project, however there were tutorials that have been watched, followed, and implemented. Additionally, a template has also been used in this project. Resources that have been used can be listed as follows:

Social Media Web App With Python 3 and Django: This tutorial was useful for me and I learned many things including posting, having user profiles, following, likes dislikes etc. <https://www.youtube.com/watch?v=Rpi0Ne1nMdk&list=PLPSM8rIid1a3TkWEmHyDALNuHhqiUiU5A>

How To Build A Realtime Chat App With Django: This was another tutorial I followed step by step as I desired to have real time functionality for a smooth co learning experience, however it did not work for me. I kept the Django app where I attempted this tutorial (**colearning app**) however I chose not to show it in frontend. <https://www.youtube.com/watch?v=yntyk1z8NLr8>

Template: I used a template, and the code of the whole template can be found here: https://github.com/betty-gures/SWE573-Spring22/tree/main/myclub_website/TEMP_template_58888 folder. The link for the used template is <https://ld-wt73.template-help.com/intense/intense/> I bought it from <https://www.templatemonsterpreview.com/tr/demo/58888.html>

Other tutorials have not been directly followed however might have similar aspects. I watched a lot of John Elder tutorials Django-Wednesday series in youtube and other of resources provided by him. Also this series by Yüksel Çelik was helpful for me, especially the parts I did using the template: https://www.youtube.com/watch?v=CFbGMFqS3Y&list=PLIUezwWmVtFUq0RcsaBn8LR_o9R5psLPh

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1. Overview:

This project is designed as a social platform for people who love to learn, from all around the globe. Using wE-Learn, one can find like-minded people who have similar interests, join co-learning environments to learn new skills, connect with their learning friends and contribute to the collective knowledge.

Main features of the product are:

- Registration and Authentication
- Display Learning Environments
- Search Learning Environments
- Display Categories
- Display Learning Environments belonging to chosen Category
- Display details of the Learning Environment
- Display Quizzes of the Learning Environments

- Display the Glossary of the Learning Environments
- Display Co-learning Page of that Learning Environment
- Post in Co-learning Page
- Comment posts in Co-learning Page
- Follow other Co-learners
- Message other Co-learners
- Search other Co-learners
- Search tags in posts of Co-learning Page (Learning_Environment_Name_+_Question tag is the convention of using the Q&A feature of the Co-learning Page)

The project management process started with understanding the requirements of the project and realizing the software design. This process continued until the Milestone 1, which was the due date for finalizing all deliverables concerning the software design (Requirement elicitation, Mockups, Design Diagrams, etc.). Therefore, most of the design process was finalized at that point, even though changes occurred during the implementation phase and arising problems required design changes. In the case of this project, the mockups proved being a helpful guide throughout the implementation of the project. The requirements are written in detail, however due to time limitations of the semester, a prioritization process took place and not all of them were met; The must-have requirements were separated from the good to have requirements.

The project management continued with the planning of the next milestones, such that the second milestone included basic functionalities and each of the following milestones was about adding new features to the previous deliverable. In MVP2, the basic features below were included to the project:

- Login, Register
- Profiles
- Followers
- User Search
- User Notifications
- Likes and Dislikes

In MVP3, additional features seen below were added:

- Learning pages
- Posts in Colearning Page
- Quiz System

At the end of the semester, the Final Product Delivery took place. The application was:

- Dockerized
- Deployed
- Tested

2. Software Requirements Specification

Part 1: Requirements Elicitation and Elicitation Questions

1. What's the problem or need that this application will address? Could you please describe the purpose of this application?

This is an app that brings together the people who **love to learn**. Using this app they will be able to learn new topics or contribute to the topics they already have knowledge about so that others can benefit as well. This application will provide an environment for learning together, therefore this is not a personal journey but a shared experience.

2. What kind of subjects can people learn about on this platform?

There are no restrictions. The subjects can vary from algebra to baking a bread.

3. Who are the stakeholders in this project?

wE-Learning members, people who want to learn together.

4. On which platform will the application run (is it a mobile/web application)?

Web site.

6. How will the learning progress of the users be tracked/measured ?

Users will solve quizzes.

7. How will the application deal with the different learning styles of the users ?

Users can choose their own paths.

8. Will the application provide an online experience only- or will there be sessions of coming together physically and learning (seminars etc.)? Is there any geographical constraint ?

Implementation will be done for online. Users can set up meetings if they wish to.

9. Who can join the system?

Users who are over 18.

10. Will there be an approval mechanism for people who want to join the learning topic groups/ learning subpages?

This is to be decided by the creator/owner of the learning topic. They might choose to have a public or private group/subpage.

11. What are the main differences between the public and private learning topic groups/ learning subpages?

The public learning subpages are editable by all members of the application. The private ones require an approval mechanism.

12. A. Will there be an approval mechanism for people who want to become a member? B. Will there be an approval mechanism for people who want to join the learning subpages?

A.No B.Yes, for private subpages only?

13. A. Who will approve the applications for people who want to become a member? B. Who will approve the applications for members who want to join the private subpages?

A. Admins will be responsible for this. B. The subpage creator/owner?

14. What will be the criteria for approval for people who want to become a member?

A short bio, a list of interests and subjects they like to learn about, recommendations from existing members, a description of the motivation of that person will be asked and evaluated.

15. What will be the criteria for approval for people who want to join a private subpage?

This will be determined by the owner/ creator of the subpage. They might request to see some level of knowledge or may ask for a description of the motivation of that person etc.

16. Can the subpage creator/owner turn other members into owners as well?

Yes.

17. How can people can register after the approval?

A mail address, name, surname, a user name, and a password will be required for creating an account.

18. How can users find available learning topics?

There will be a search function in the app for the learning topic subpages and also a recommendation system that displays similar learning topics.

19. How can users find available learning topics?

There will be a search function in the app for the learning topic subpages and also a recommendation system that displays similar learning topics.

20. How can users create learning topics? Is there an approval process

If the topic does not already exist they may create it (What happens with various names of the same topic? Is there a limitation? Will this process be approved by the admin?).

21. What type of information will be visible to others in the profile of the member?

- user name
- interested topics of interest
- areas of expertise

- total hours devoted on the application
- total amount of votes(likes) received on the published learning materials/contents
- recent activity

22. What will be the contents of the “my profile” section?

- account information
- votes(likes) accumulated
- comments written and received

23. How will the misinformation be prevented? How will the process of adding learning materials be verified?

The materials on the public subpages will not be verified but as there is a voting system and ability to comment, other users might downvote and comment. There might be a flagging system and if there is a wrong information other users might report this with the flags. Admins can remove misinformation contents. The private pages should be opened by people who have considerable amount of knowledge about that topic; as the owner of the page they can remove misinformation contents.

24. What will happen in case of misconduct, abuse, or disagreement?

There will be a complain button to pass the issue to people who will make an investigation and will give a final decision.

25. What will be the sections in the app that users can navigate?

- How it works
- FAQ
- Learning subpages (search, recommended lists, newly added...)
- Join
- MyProfile

26. Does the app have a friendship/following mechanism among profiles?

Yes.

Part 2: Requirements:

1. Membership and Registration:

1.1 Authenticated users shall be able to add resources to the platform.

1.2 Guest users shall monitor all of the learning subpages and their contents.

1.3 Guests shall be able to search for learning topics.

1.4 Guests shall not be able to see the members of the learning topic groups.

1.5 Guests shall not be able to add resources to the platform.

1.6 Guests shall not be able to create new learning topic subpages.

1.7 Guests shall see registration advice to the application.

1.8 In order to be authenticated, users shall follow a sign-up process.

1.9 For Sign-up process, users shall provide:

- Valid email address and password

- Username

- First name

- Last name

- Mobile phone number.

1.10 Members shall receive a verification email after registration.

1.11 System shall have an approval pending process which means everyone can join the community after the profile is approved by the admin.

1.12 Members shall be able to log in by email and password.

1.13 Users shall flag any behavior they consider disturbing

1.14 Admins shall be able to remove users from system.

1.15 Application shall keep personal data properly in accordance with KVKK

2. Administration of Platform:

2.1 Administrator user shall view and modify information for all registered users, all posted on learning subpages created by users, view activities of other users.

2.2 Admin, as a superuser, shall get a notification, in order to decide on removing any posted material on learning subpages, if certain amount of people have flagged it as misinformation.

2.3 Admin shall remove a user from the community, in case of illegal activity repeated by her/him.

2.4 Admins shall be able to manually add a user in case there is a problem with her/his account.

2.5 Admins shall be able to solve the software related problems.

2.6 Admins shall be able to see all the private details of each user.

3. Features of System:

3.1 Platform shall be a web application having frontend and backend.

3.2 Learning Environment Creation and Posting Material on these pages

3.2.1 Users shall create new learning subpages.

3.2.2 Users shall post material on learning subpages.

3.2.3 Posted material shall be of any kind: videos, animations, texts, documents, images etc.

3.2.4 Users shall be able to edit their posts

3.2.5 Users shall be able to delete their posts

3.2.6 Users shall be removed from system if they get flagged 10 times for misinformation.

3.3 Search

3.3.1 Users shall be able to search and find learning topics by a keyword, the result shall consist of relevant subpages.

3.3.2 The search function shall not work case sensitive.

3.3.3 Users shall be able to filter the search result by providing filter areas like language of the information, date of creation of subpages.

3.4 Profile Management and Friendship

3.4.1 Members shall be able to follow each other.

3.4.2 Members shall be able to see their following and follower members.

3.4.3 Members shall have a page, on which their contribution and membership to learning subpages can be found.

3.4.4 Members shall be able to see the contributions of their following friends.

3.4.5 Members shall be able to see the subpages that might be interesting to them based on their profiles.

3.4.6 Members shall be able to send messages to each other via the application.

3.4.7 Members shall be able to send emails to each other via the application.

3.4.8 Members shall be able to see each post's reviews and rates.

3.5 Notification

3.5.1 System shall send notifications when any new post appear on the subpages that the user is a member of

3.5.2 Members shall be notified when their posts get reactions.

3.5.3 Members shall be notified when they have new friendship requests.

3.5.4 Members shall be notified when they are accepted/rejected to join private subpages.

3.6 Note Taking

3.6.1 Users shall be able to take personal notes.

3.6.2 The note taking system shall be flexible to allow people with different learning styles to benefit from it.

3.7 Reward and punishment system

3.7.1 After an informative post is published on learning subpages, other users can vote the post (like or dislike).

3.7.2 Users shall be able to give badges to other users

3.7.3 Users shall be able to block other users

3.7.4 Owners of the subpage shall be able to select other owners.

3.6 Activity Stream

3.6.1 Activity stream shall display the recent activity of the users that we follow.

3.6.2 Activity stream shall display the recently opened learning pages.

3.7 Public and Private Learning Pages

3.7.1 Learning pages shall be moderated or not depending if they are public or private pages.

3.7.2 All members shall join and add resources to public pages.

3.7.3 Creator of space/ moderator shall determine if the pages are public or private.

3.7.4 Learning pages shall be able to be switched from public to private and vice-versa.

3. Design (Software & Mockups) – UML diagrams and images

(a) Scenarios and Mockups

Scenarios:

Persona 1: Doğan Doğa, 22

- Doğan is a passionate young academician. Originally, he is from Turkey, and has a very successful background. He has graduated from İst. Erkek Lisesi as the best student after which he has shown great success in University entry exams. He graduated from Boğaziçi University EE department and recently started pursuing his masters at MIT, on a full scholarship.
- Besides all the fancy titles and incredible success stories, Doğan is a person who really enjoys learning and spending his time in the library. Professionally, he is particularly interested in 3d printing. As a hobby, he enjoys to watch movies and speculate of the psychological meanings behind it (additionally, he is a Potterhead). He likes to read about movie criticism, modern psychology and related literature like J. Campbell, Jung and Freud.
- At the moment he lives in Boston, in MIT Campus. He's employed as a research assistant, and his program allows him considerable amount of spare time to devote to his hobbies.

- As a newbie abroad, he is searching for a platform on the web where he can find like-minded fellows. He would like to befriend such people both in person and online.

Persona 1_Scenario 1 (First encounter)

- He comes across to the wE-Learning platform, and after reading the informative material about how the system works on the **landing page**, he feels interested and wants to learn more, therefore continues as a guest.
- He goes to the **home page**, that includes a search bar and types "Movie Criticism Psychology". As a result he finds the following learning environments: "MIT Movie Club", "Movie Lovers Worldwide", "Movie Analysis in Psychology"
- He likes the suggestions and clicks on "MIT Movie Club". He can see a bunch of channel titles: "Announcements", "RoadMap", "Weekly Meeting Highlights", "General", "Share-out", "Society". He clicks on "RoadMap" and sees that each week, members of this group are analyzing one movie (some weeks they have two options and members can choose).
- Members also organize a weekly event for watching that movie together, afterwards they write criticism papers and post them on the "Share-out" channel.
- Doğan clicks on the "Share-out" channel. To his luck, that week's movie was the Harry Potter and he can find a bunch of posted papers on this topic. He is particularly interested in one paper that has done the psychological analysis in jungian perspective.
- Doğan loves this post, and is very curious about the person who posted this article. He can see the name of the writer, but when he wants to access the profile page to know more about him, he can not access (as he entered the web application as a guest). Therefore, Doğan decides to sign up to wE-Learning.

Persona 1_Scenario 2 (Login)

- Doğan is ready to provide the necessary information and create an account; He returns to the home page and then clicks on sign-up.
- Doğan signs up by entering the following information:
 - Name
 - Surname
 - Email
 - Password
 - Password Confirmation
- As the final step, he checks Agree on terms and conditions.
- He immediately receives an email message confirming that "He has become a member and now he can join learning environments and connect with other members."
- He goes to the Login section.

- He logs in with his username and password.
- After the login, a new sidebar menu is opened with the following tags.
 - My Profile
 - Join Learning Environments
 - Follow other wE-Learners
 - Create new Learning Environments
- When he clicks on My Profile section, he sees that there are some available fields that he fills in.

Fields	User Input
Profile Picture	X
Name Surname	Doğan Doğa
Description	I'm a young academician
Location	Boston, USA
Area of expertise	Electrical Engineering, 3d printing
Area of interest	Movies, Psychology, Critisim, Analysis, Writing, Reading

Profile Page Form

- Then he clicks on the learning environment he found before. Now, he can see a join button, and becomes a member of the group. This group is public therefore he does not need to wait for approval.
- As a member, he is now able to see the other members of the learning environment. He checks out the profile of the user, whose paper he enjoyed reading.
- He likes the profile page of the user, and sends a friend request, feeling lucky to have found a seemingly like-minded person.

Persona 1_Scenario 3 (Create Learning Environment)

- Doğan is happy of the experience so far, but wants to further explore the application.
- He uses the search engine one more time and looks for "3d printing"

- Unfortunately, there is no such a learning environment, and he decides to create it himself. He goes to the "Create Learning Environment" page, and comes across to another form.

Fields	User Input
Title of the Learning Environment	3D Printing Enthusiasts
Privacy choice	Public
Description	Learning Environment for 3D Printing Enthusiasts worldwide
Add Channels (option to add more +)	Roadmap, General, Quizz (mandatory chanells required by system); Doğan adds additional channels: "3d printed architecture examples", "My 3d printed objects" (for members to share their own prints)

Learning Environment Creation Form

- He clicks on the Create button.
- Later that day, the new learning page is joined by its first members. Doğa chats with them through DM's and they start filling the learning environment with new channels and new, appropriate, good-quality, learning materials(books, videos, images, diagrams, texts) posted on those channels.
- The new members that chat with Doğan enjoy the conversation and acknowledge his expertise on the topic. Doğan receives "Master of 3D printing" badge.
- Doğan pins up the most useful resources for each channel. For the moment he is the only learning page owner and can create channels. As the community starts to grow and other people with experience join the learning environment, he may choose other responsible and knowledgeable members to become co-owners.

Persona 2: Micarah Tewers, 26

- Micarah is a costume sewer, creator and fashion designer with a DIY style who likes to create everything from prom dresses to historical costumes to fairy tale outfits. She is a YouTuber with a channel of 1.8 million subscribers. She has dressed up as characters from movies like Spider-Man, Pretty Woman, The Princess Bride and Frozen.
- She has a community of fans already, but wishes to have a more intimate relationship with people who share the same passions as she does like: Creative writing, Costume Designing, Sewing, Humor, Cosplay, Historically accurate outfits, Video content creation etc.
- She wants to join already existing learning environments related to her topics of interest, but also wants to create a new environments, where she can learn new techniques of sewing but also teach her skills to people who would like to go on a similar path as she does.

Persona 2_Scenario 1 (Quiz system)

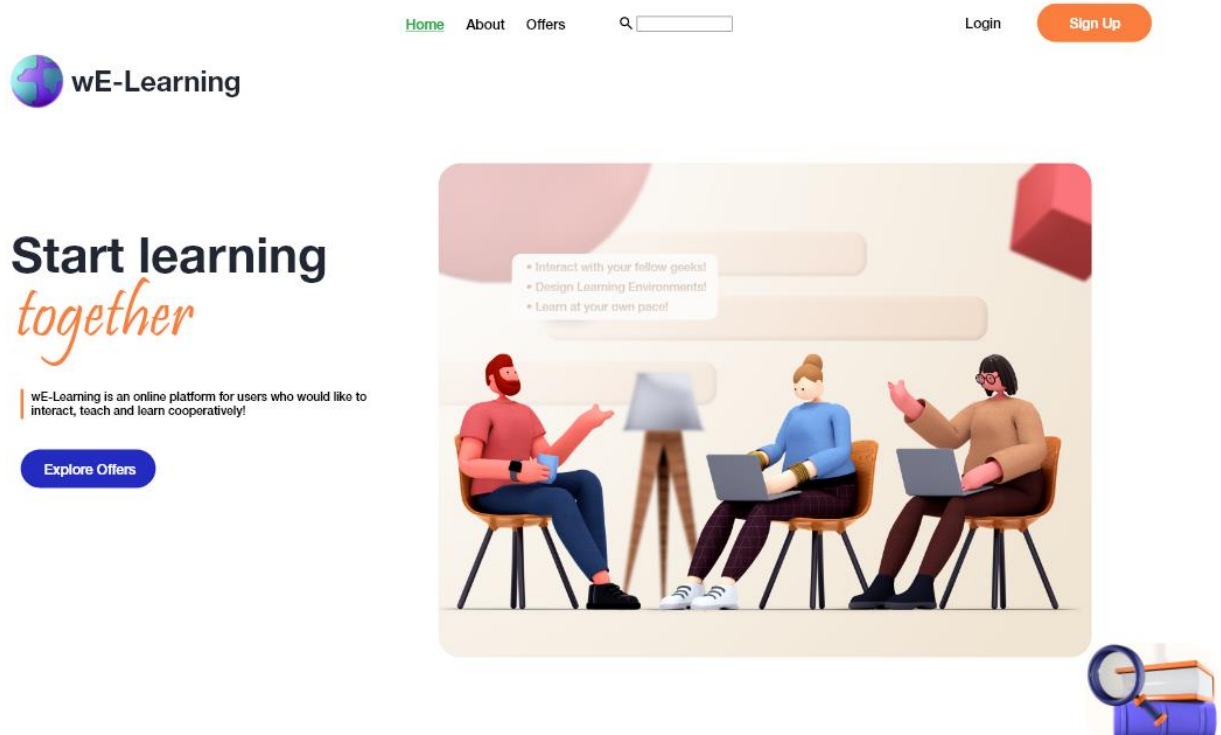
- Due to the reasons mentioned above, Micarah creates a new learning environment called "Creative Sewing".
- She is used to being followed and having fans, but she wants to see how many people would actually learn from her, therefore she is exited for this new experience. She wants to include newcomers with no experience before, therefore creates a roadmap that starts with the very basics of sewing.
- The roadmap comes with certain milestones, and Micarah designs a quiz for each of these milestones. The quiz system can be a multiple choice question, or might require a submission. As sewing is a practical knowhow, Micarah mostly prepares submission kind of quizzes.
- The submission phase takes place in the channels created for their submission. For instance a member that has finished the first step- basics of sewing, will encounter quiz 1. The member will execute the sewing challenge and post the picture in the channel: "Quiz 1 submissions". Micarah, as well as other members can see the submission, comment and guide the person on their learning journey.

Persona 2_Scenario 2 (Co-learning)

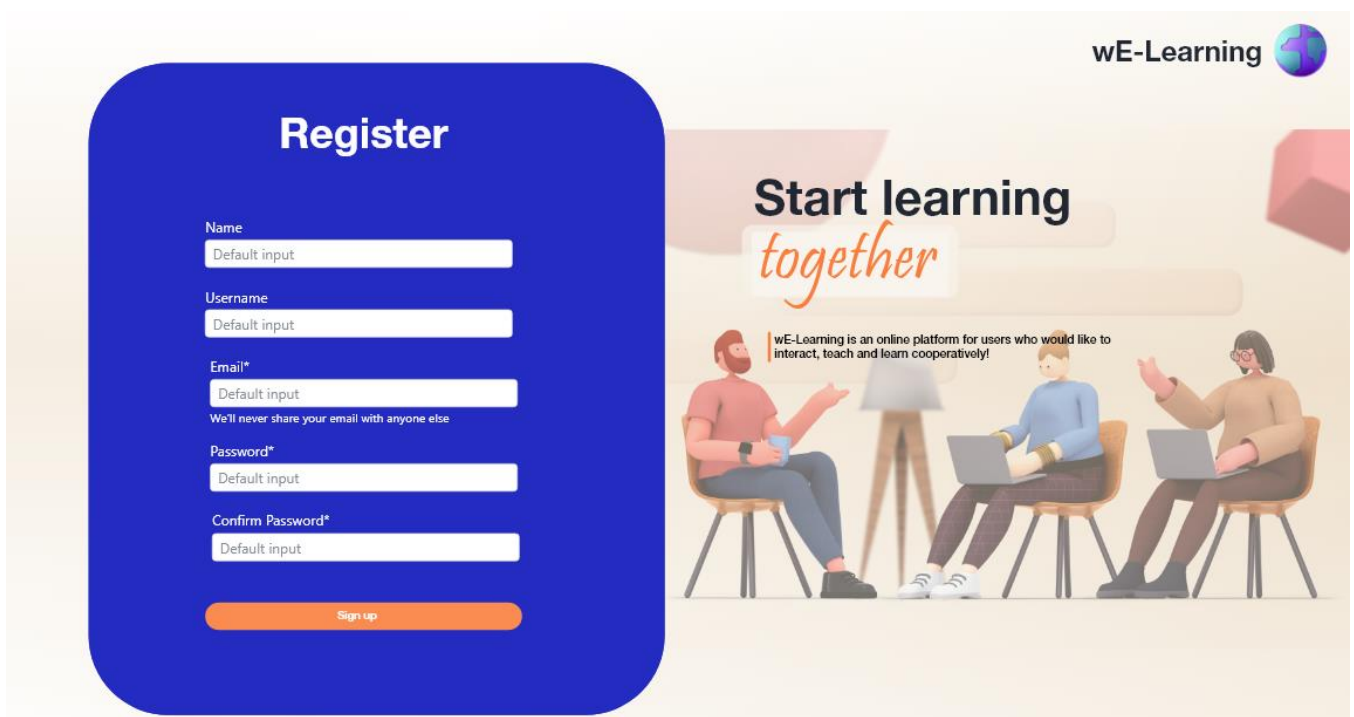
- Micarah and other members of the learning environment decide to have collaborative brain stormings.
- These discussions will be like a collaborative practice of sewing techniques.
- Members will click on Co-learning section, which will take them to this page, devoted for the experience of learning together.
- Members can communicate, by chatting. They can also share images of their progress and ask questions, or ask for critiques.
- The posted material will remain for any person who would have the same question.

Mockups

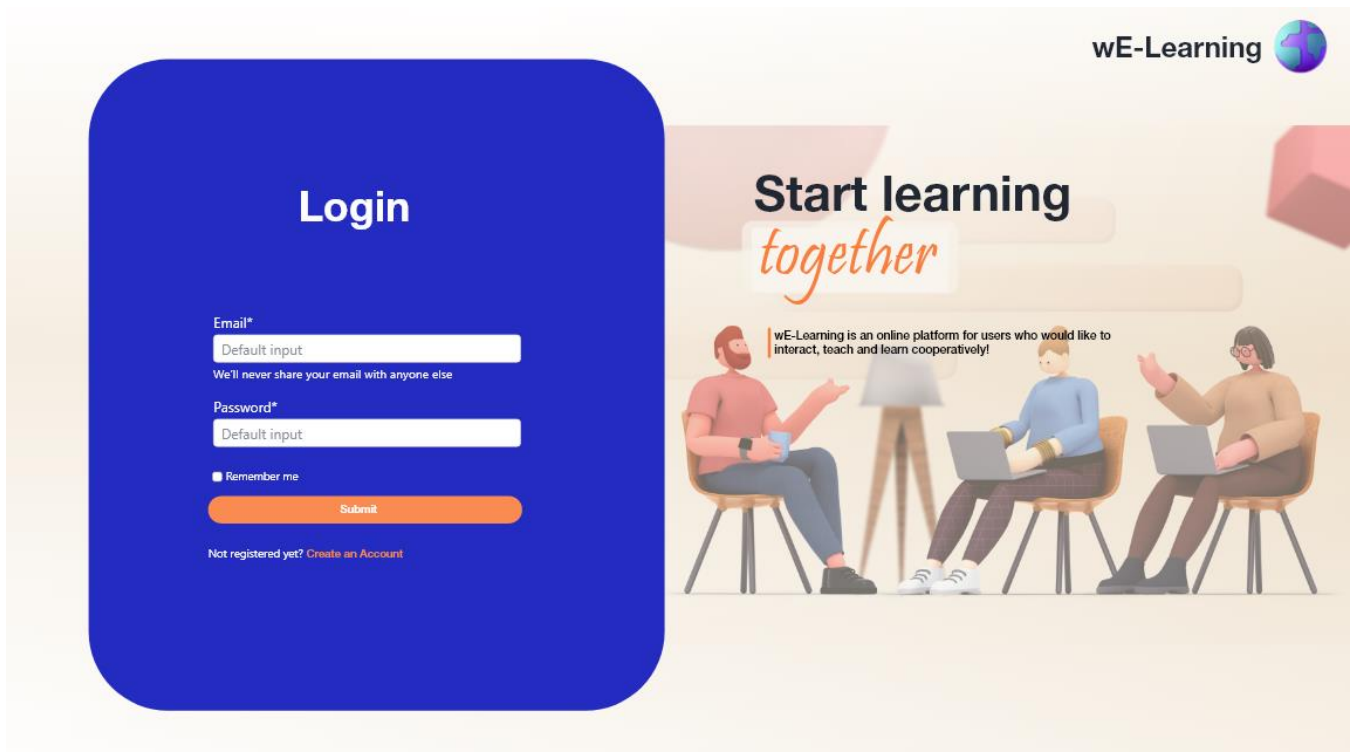
Landing Page: Vanessa has heard of the wE-Learning community, and wants to explore the website.



Register Page: As the landing page made a good impression on her, she wants to register, dive deeper.

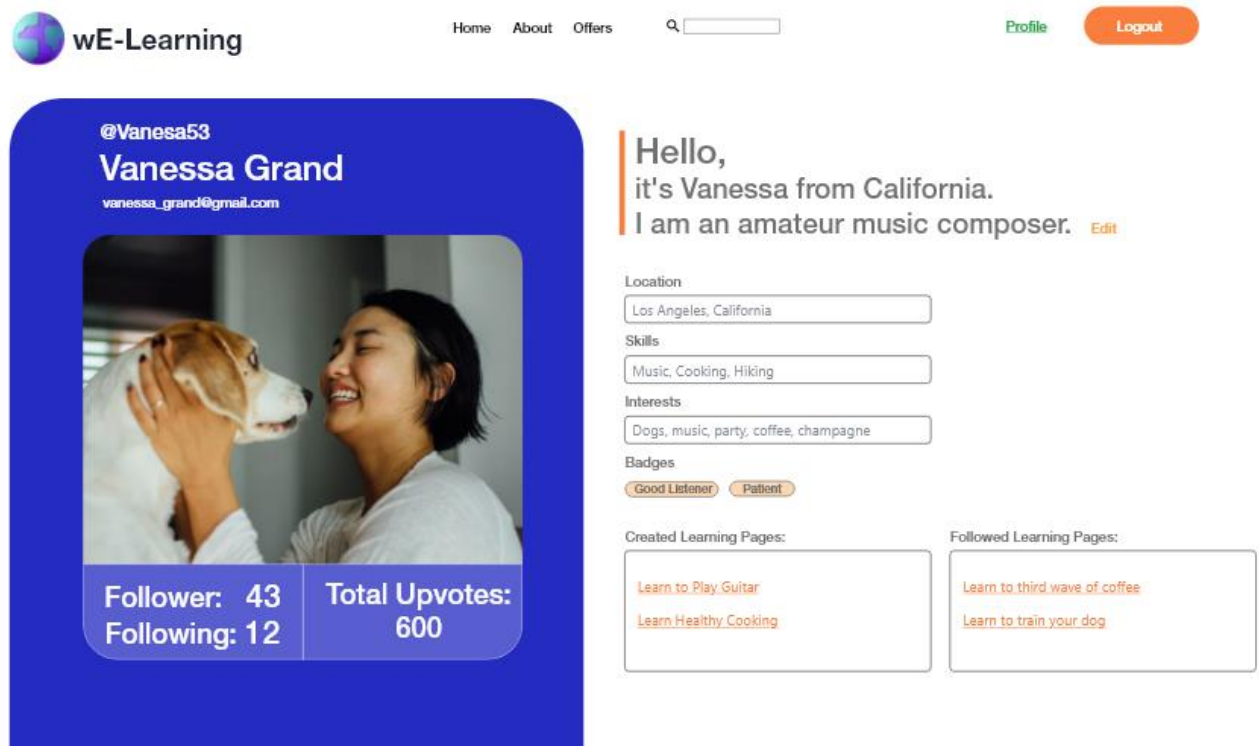


Login Page: Once she is registered, she is ready to log in.



The login page features a blue rounded rectangle on the left with the title "Login". It contains two input fields for "Email*" and "Password*", each with "Default input" as placeholder text. Below the password field is a "Remember me" checkbox and a "Submit" button. A link "Not registered yet? Create an Account" is at the bottom. To the right, the "wE-Learning" logo is in the top right corner. The main heading "Start learning together" is in a mix of bold and script fonts. Below it, an illustration shows three people sitting in a circle, interacting. A text box explains: "wE-Learning is an online platform for users who would like to interact, teach and learn cooperatively!"

Profile Page: After one week of exploration of the app, she updates her profile.



The profile page for user @Vanessa53 (Vanessa Grand) is shown. The header includes the wE-Learning logo, navigation links (Home, About, Offers), a search bar, and links for Profile and Logout. The profile card on the left displays the user's name, email, a photo of her with a dog, and statistics: 43 Followers, 12 Following, and 600 Total Upvotes. The right section contains a bio: "Hello, it's Vanessa from California. I am an amateur music composer." with an Edit link. Below the bio are fields for Location (Los Angeles, California), Skills (Music, Cooking, Hiking), and Interests (Dogs, music, party, coffee, champagne). Badges for "Good Listener" and "Patient" are shown. At the bottom, two boxes list "Created Learning Pages" (Learn to Play Guitar, Learn Healthy Cooking) and "Followed Learning Pages" (Learn to third wave of coffee, Learn to train your dog).

Home Page when Logged in: The system shows to wanessa the popular learning topics as well as topics that may suit her tase, based on previous activity.

wE-Learning

Welcome back Vanessa!

Main Page

Offered Learning Pages

Followed Learning Pages

Progress

Messages

Home About Offers

search learning topics, people, keywords...

Logout

Recently created Topics

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

See more →

Topics for you

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

Learn Spanish
Lovers of Spanish language and Culture meet here
Creator: Ali Kerem 65000 followers

See more →

Main Learning Page: Vanessa has been studying Spanish for a while and she is ready to start the third subtopic.

wE-Learning

Welcome back Vanessa!

Main Page

Offered Learning Pages

Followed Learning Pages

Progress

Messages

Home About Offers

search learning topics, people, keywords...

Logout

Learn Spanish Lovers of Spanish language and Culture meet here Creator: Ali Kerem 65000 Followers

Roadmap Build your own roadmap (although we recommend you to continue on the traced pathways, you are free to go to any subject)

Glossary View the most recent additions to the dictionary

Hola – Hello.
Adiós – Goodbye.
Por favor – Please.
Gracias – Thank you.
Lo siento – Sorry.
Salud – Bless you (after someone sneezes)
Sí – Yes.
No – No.

See more →

Recent Questions

Any roadmap advice for visual learners?
Which node would be better to start for an intermediate learner?

See more →

Recent Colearning Rooms

We are watching the spanish literature conference of Professor Santos, join us!
We are searching and listing best the spanish restaurants in New York. Help us rate!

See more →

Learning Subcategory Pages: She clicks on the third subtopic and goes to a main page of the subcategory where she can see a mini-roadmap, all colearning environments and all quizzes related to the subcategory.

The screenshot shows the wE-Learning interface. On the left is a blue sidebar with the wE-Learning logo and a welcome message 'Welcome back Vanessa!'. Below this are links: 'Main Page', 'Offered Learning Pages', 'Followed Learning Pages', 'Progress', and 'Messages'. The main content area is titled 'Learn Spanish' and 'Lovers of Spanish language and Culture meet here'. It features a search bar, a 'Logout' button, and a creator profile for 'Ali Kerem' with 65,000 followers. The subcategory 'C: Colors' is selected. It contains a 'Mini Roadmap' with a diagram showing a path from 'start' to '1' (Light colors), '2' (Dark colors), and '3' (Color properties). Below the roadmap is a 'See more' link. To the right are sections for 'Quiz' (with links to test knowledge on light colors, dark colors, and color properties), 'Glossary' (listing Red = Rojo, Blue = Azul, Orange = Anaranjado, Green = Verde), and 'Q&A's' (with a question about the answer to a quiz). Below these is a 'Preview of subcategories' section showing 'C.1 Light colors' and 'C.2 Dark colors'. The 'C.1 Light colors' section is expanded, showing a definition of light color, a list of filters, and a description of a spotlight. The 'C.2 Dark colors' section is partially visible on the right.

She desires to start learning colors, by learning light colors first. Therefore her journey starts on the mini-roadmap as well. On this page she can only see the relevant colearning environments and quizzes.

The screenshot shows the wE-Learning interface, similar to the previous one, but with the subcategory 'C.1: Light Colors' selected. The 'Mini Roadmap' is updated to show a path from 'start' to '1' (Light colors), '2' (Dark colors), and '3' (Color properties). The 'Quiz' section now only has a link to 'Test your light color knowledge'. The 'Glossary' and 'Q&A's' sections remain the same. The 'Preview of subcategories' section now only shows 'C.1 Light colors', which is expanded to show the same definition and list of filters as before. The 'C.2 Dark colors' section is no longer visible. The 'See more' link at the bottom right of the expanded section is now visible.

Collaborative Learning Page: She is curious what other followers of the page have been discussing so far, so she has a quick look over the C.1 Learners co-learning room.

The screenshot shows the wE-Learning platform interface. On the left is a blue sidebar with the wE-Learning logo and a welcome message for Vanessa. The main content area is titled 'Learn Spanish' and features a search bar, navigation links (Home, About, Offers), and a 'Logout' button. Below the header, the 'Learn Spanish' page is displayed, showing the creator 'Ali Kerem' with 65,000 followers. The 'Colearning room C.1 learners' section contains three discussion posts:

- Yasmine** (20 likes, 45 min ago): Hello fellows! I was going through the material but got stuck when came to Amarillo. How does that mean yellow, I thought it means sour...This language is so confusing
- Bahadır** (10 likes, 30 min ago): Hey Jasmine don't lose hope! I also got stuck there but then I figured it out. This video was super useful to me and maybe can clarify the situation for you as well! www.youtube.com/tunwrgf
- John** (20 min ago): Wow bahadır you are always so good at finding resources! Thanks for this one as well I love it.

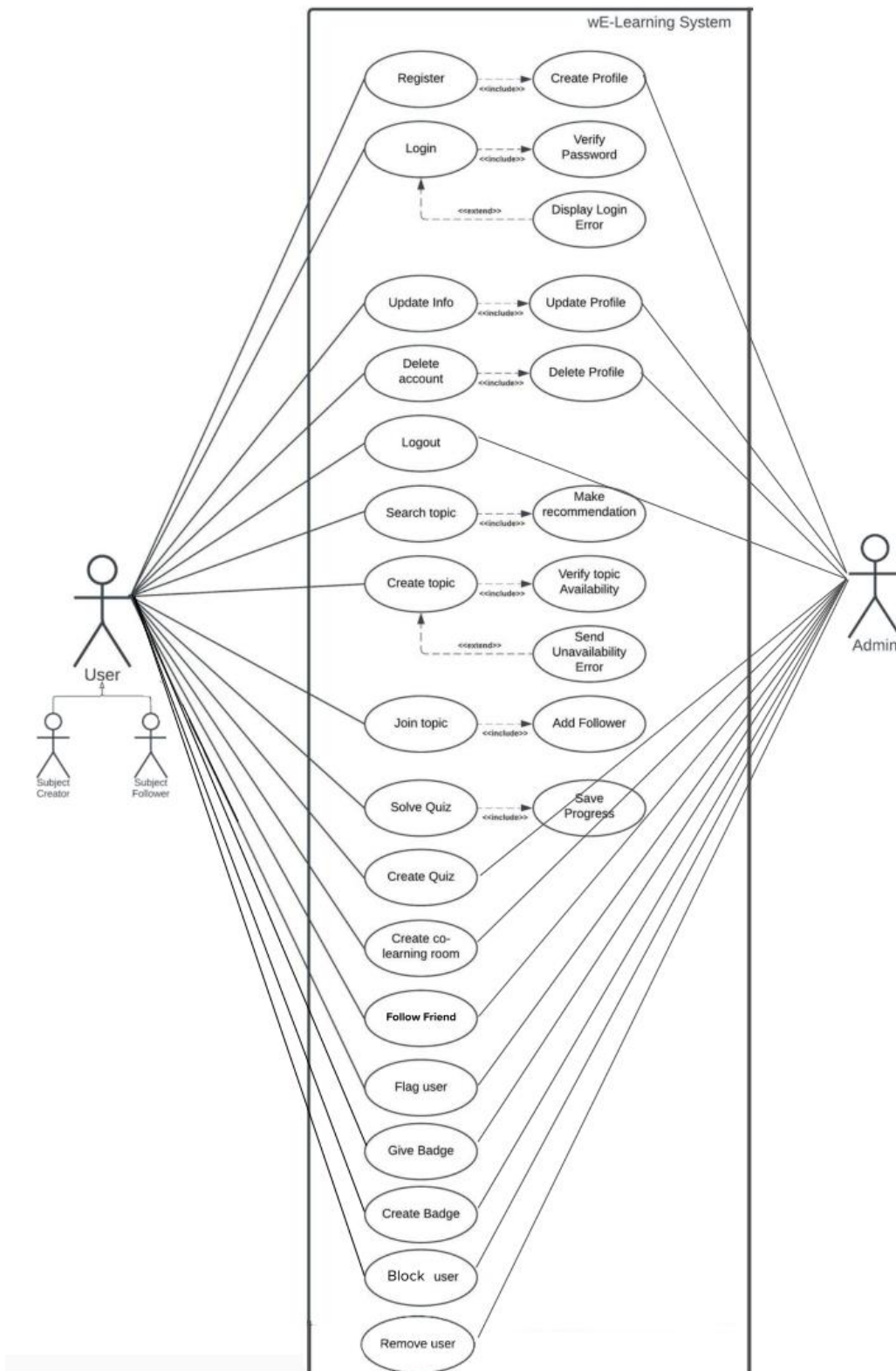
Q&A Page: She also checks out the Q&A's.

The screenshot shows the wE-Learning platform interface, similar to the previous one, but with the 'Q&A's for C.1' section displayed. The sidebar and header are identical. The 'Learn Spanish' page shows the creator 'Ali Kerem' with 65,000 followers. The 'Q&A's for C.1' section contains three posts:

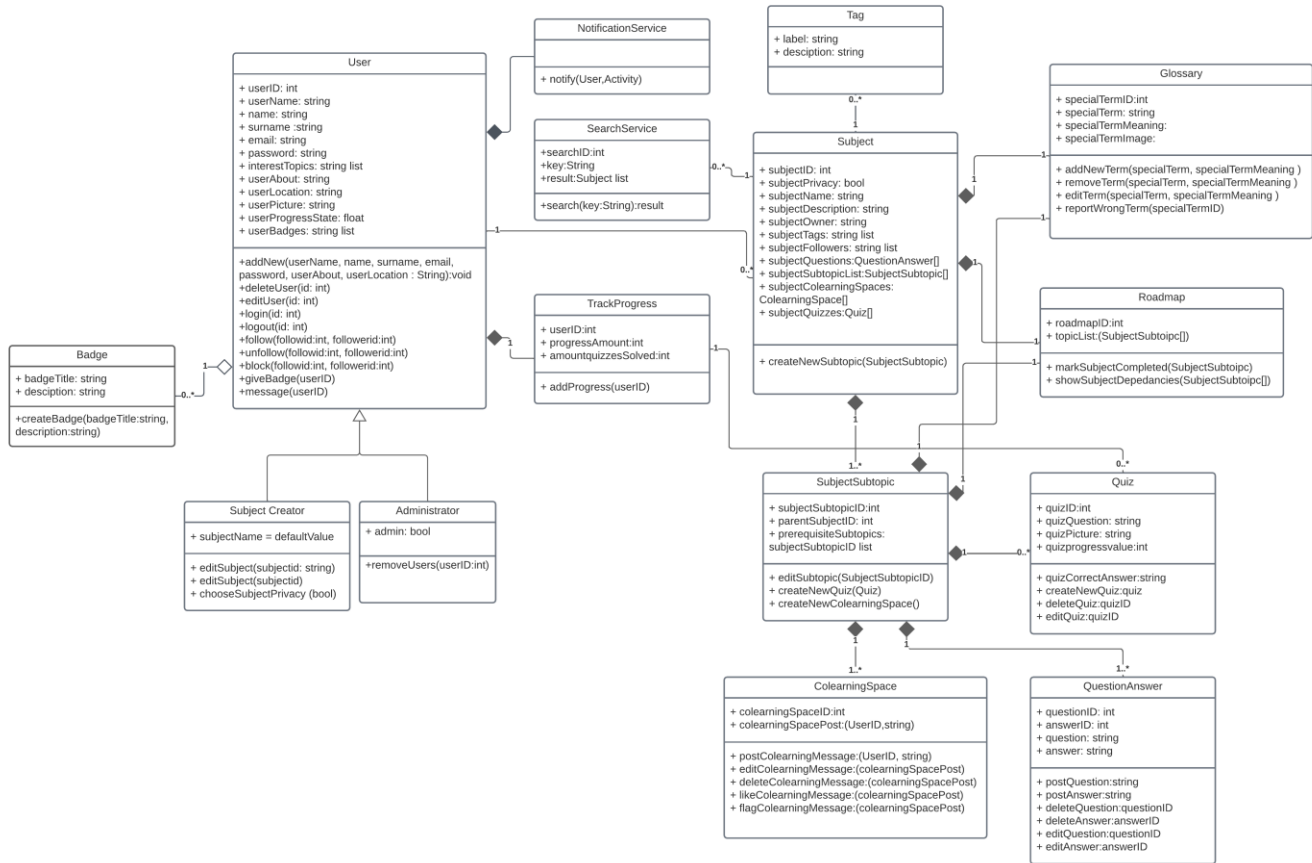
- Yasmine** (20 likes, 45 min ago): Q: Why is the answer of test light color quiz question 2 A and not B?
- Bahadır** (10 likes, 30 min ago): A: Becasue the question is about the color of the bread, not the taste of it.
- John** (20 min ago): Q: When I was living in Spain, we were pronouncing azul differently, than it is in this described in the glossary. Is that a mistake?
- Bahadır** (20 likes, 10 min ago): A: I checked it and the gossary seems correct. I think you are confusing with the catalan pronunciaon.

(b) Software design documents in UML

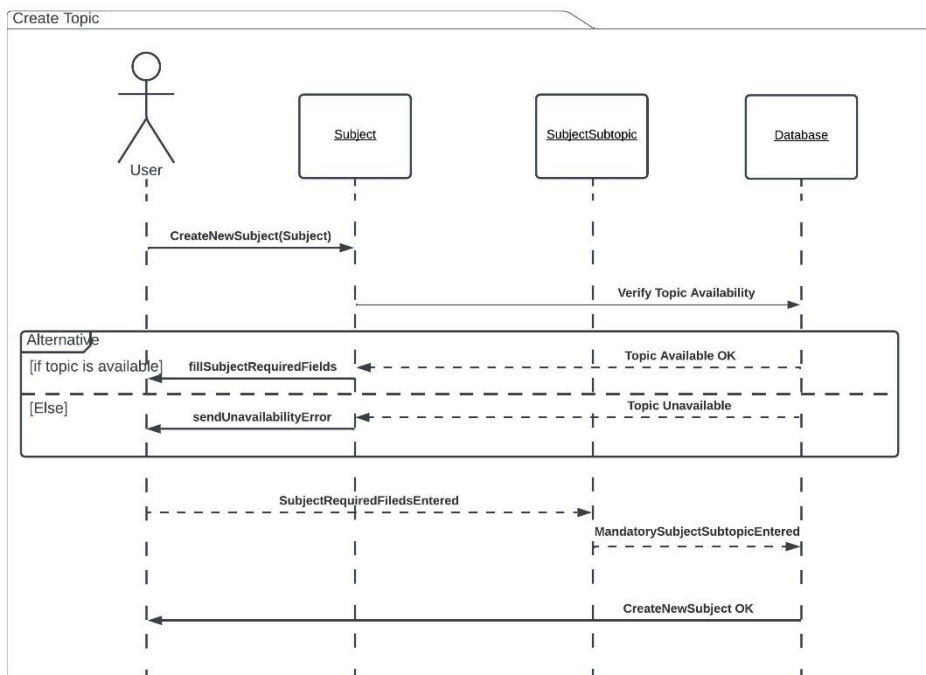
Use case Diagram



Class Diagram



Sequence Diagram



4. Status of your project: the status of each requirement (completed, not completed where completed means it is documented, tested and deployed)

Observation: by testing, I assume unit tested- therefore I declare not tested if it is the case. However manual testing has been done (ex. Created a post, tested if it deletes, etc.)

1. Membership and Registration:

1.1 Authenticated users shall be able to add resources to the platform.

(half completed, implemented, documented, not tested, deployed)

1.2 Guest users shall monitor all of the learning subpages and their contents.

(half completed, implemented, documented, not tested, deployed)

1.3 Guests shall be able to search for learning topics.

(half completed, implemented, documented, not tested, deployed)

1.4 Guests shall not be able to see the members of the learning topic groups.

(not completed)

1.5 Guests shall not be able to add resources to the platform.

(half completed, implemented, documented, not tested, deployed)

1.6 Guests shall not be able to create new learning topic subpages.

(half completed, implemented, documented, not tested, deployed)

1.7 Guests shall see registration advice to the application.

(half completed, implemented, documented, not tested, deployed)

1.8 In order to be authenticated, users shall follow a sign-up process.

(half completed, implemented, documented, not tested, deployed)

1.9 For Sign-up process, users shall provide:

- Valid email address and password
- Username
- First name
- Last name
- Mobile phone number.

(half completed, implemented, documented, not tested, deployed)

1.10 Members shall receive a verification email after registration.

(not completed)

1.11 System shall have an approval pending process which means everyone can join the community after the profile is approved by the admin.

(not completed)

1.12 Members shall be able to log in by email and password.

(half completed, implemented, documented, not tested, deployed)

1.13 Users shall flag any behavior they consider disturbing

(not completed)

1.14 Admins shall be able to remove users from system.

(not completed)

1.15 Application shall keep personal data properly in accordance with KVKK

(not completed)

2. Administration of Platform: (not completed)

2.1 Administrator user shall view and modify information for all registered users, all posted on learning subpages created by users, view activities of other users.

2.2 Admin, as a superuser, shall get a notification, in order to decide on removing any posted material on learning subpages, if certain amount of people have flagged it as misinformation.

2.3 Admin shall remove a user from the community, in case of illegal activity repeated by her/him.

2.4 Admins shall be able to manually add a user in case there is a problem with her/his account.

2.5 Admins shall be able to solve the software related problems.

2.6 Admins shall be able to see all the private details of each user.

3. Features of System:

3.1 Platform shall be a web application having frontend and backend.
(half completed, implemented, documented, not tested, deployed)

3.2 Learning Environment Creation and Posting Material on these pages

3.2.1 Users shall create new learning subpages.
(not completed)

3.2.2 Users shall post material on co-learning subpages.
(half completed, implemented, documented, not tested, deployed)

3.2.3 Posted material shall be of any kind: videos, animations, texts, documents, images etc.
(half completed(no videos), implemented, documented, not tested, deployed)

3.2.4 Users shall be able to edit their posts
(half completed, implemented, documented, not tested, deployed)

3.2.5 Users shall be able to delete their posts
(half completed, implemented, documented, not tested, deployed)

3.2.6 Users shall be removed from system if they get flagged 10 times for misinformation.

(not completed)

3.3 Search

3.3.1 Users shall be able to search and find learning topics by a keyword, the result shall consist of relevant subpages.

(half completed, implemented, documented, not tested, deployed)

3.3.2 The search function shall not work case sensitive.

(half completed, implemented, documented, not tested, deployed)

3.3.3 Users shall be able to filter the search result by providing filter areas like language of the information, date of creation of subpages.

(not completed)

3.4 Profile Management and Friendship

3.4.1 Members shall be able to follow each other.

(half completed, implemented, documented, not tested, deployed)

3.4.2 Members shall be able to see their following and follower members.

(half completed, implemented, documented, not tested, deployed)

3.4.3 Members shall have a page, on which their contribution and membership to learning subpages can be found.

(half completed(contribution seen on profile page), implemented, documented, not tested, deployed)

3.4.4 Members shall be able to see the contributions of their following friends.

(half completed(profile pages of follwed user), implemented, documented, not tested, deployed)

3.4.5 Members shall be able to see the subpages that might be interesting to them based on their profiles.

(not completed)

3.4.6 Members shall be able to send messages to each other via the application.

(half completed, implemented, documented, not tested, deployed)

3.4.7 Members shall be able to send emails to each other via the application.

(not completed)

3.4.8 Members shall be able to see each post's reviews and rates.

(half completed, implemented, documented, not tested, deployed)

3.5 Notification

3.5.1 System shall send notifications when any new post appear on the subpages that the user is a member of

(not completed)

3.5.2 Members shall be notified when their posts get reactions.

(half completed, implemented, documented, not tested, deployed)

3.5.3 Members shall be notified when they have new friendship requests.

(half completed, implemented, documented, not tested, deployed)

3.5.4 Members shall be notified when they are accepted/rejected to join private subpages.

(not completed)

3.6 Note Taking (not completed)

3.6.1 Users shall be able to take personal notes.

3.6.2 The note taking system shall be flexible to allow people with different learning styles to benefit from it.

3.7 Reward and punishment system

3.7.1 After an informative post is published on learning subpages, other users can vote the post (like or dislike).

(half completed, implemented, documented, not tested, deployed)

3.7.2 Users shall be able to give badges to other users

(not completed)

3.7.3 Users shall be able to block other users

(not completed)

3.7.4 Owners of the subpage shall be able to select other owners.

(not completed)

3.6 Activity Stream (not completed)

3.6.1 Activity stream shall display the recent activity of the users that we follow.

3.6.2 Activity stream shall display the recently opened learning pages.

3.7 Public and Private Learning Pages (not completed)

3.7.1 Learning pages shall be moderated or not depending if they are public or private pages.

3.7.2 All members shall join and add resources to public pages.

3.7.3 Creator of space/ moderator shall determine if the pages are public or private.

3.7.4 Learning pages shall be able to be switched from public to private and vice-versa.

5. Status of Deployment

The webapp is dockerised and deployed. The URL is:

<http://ec2-52-204-191-145.compute-1.amazonaws.com/>

6. System Manual

The requirements to run this system are all listed in the requirements.txt file within myclub_website folder. Below is the content of it:

- asgiref==3.5.0
- certifi==2021.10.8
- cffi==1.15.0
- charset-normalizer==2.0.12
- cryptography==36.0.2
- defusedxml==0.7.1
- dj-database-url==0.5.0
- Django==4.0.3
- django-allauth==0.50.0
- django-ckeditor==6.4.1
- django-crispy-forms==1.14.0
- django-heroku==0.3.1
- django-js-asset==2.0.0
- gunicorn==20.1.0
- idna==3.3
- mysqlclient==2.1.0

- oauthlib==3.2.0
- Pillow==9.1.0
- psycpg2==2.9.3
- pycparser==2.21
- PyJWT==2.3.0
- python-decouple==3.6
- python3-openid==3.2.0
- requests==2.27.1
- requests-oauthlib==1.3.1
- sqlparse==0.4.2
- tzdata==2021.5
- urllib3==1.26.9
- whitenoise==6.0.0

Installation instructions for docker:

-After pulling the code in the repository, one must open a terminal and come to the project location in their computer

-Type in the following command in the terminal to setup the docker:

docker-compose up

There is no need to change directory because the docker files (Dockerfile.txt and docker-compose.yml) are at the same location with the requirements.txt file, and we already changed directory to come here.

Quick side-note: (Please do not get confused with Dockerfile2.txt and docker-compose2.yml, because these were attempts for when I was using mySQL database, but have changed to PostgreSQL. I wanted to keep the files to show track of my efforts)

-If desired to migrate changes one must type the following two commands, in the order it is given:

docker-compose run welearning python manage.py makemigrations

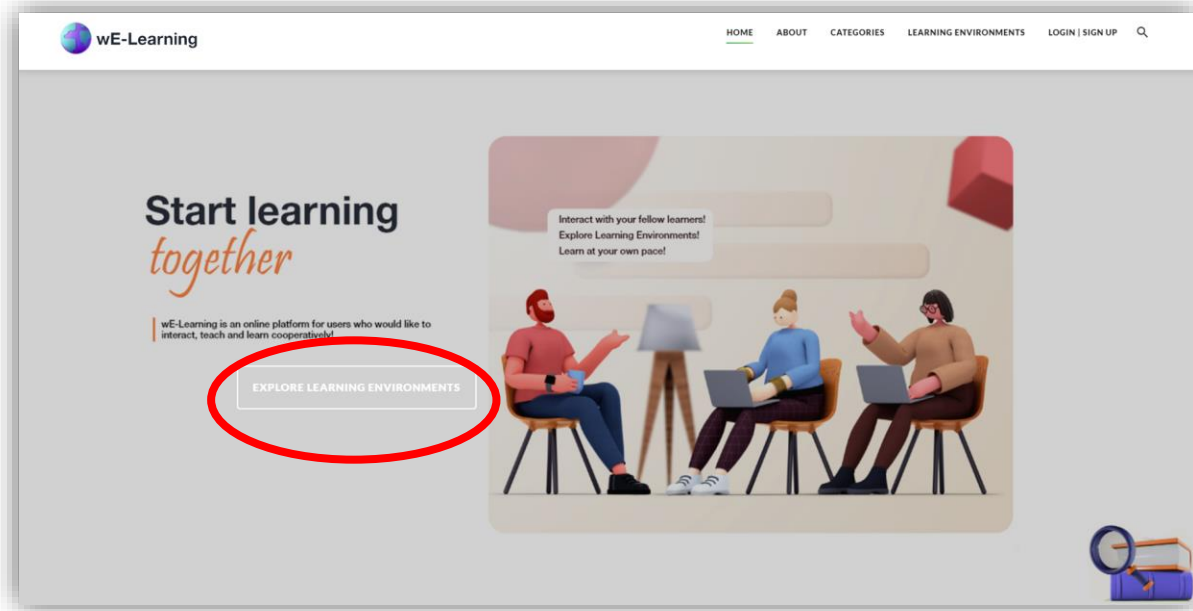
docker-compose run welearning python manage.py migrate

-To run tests, one must type in

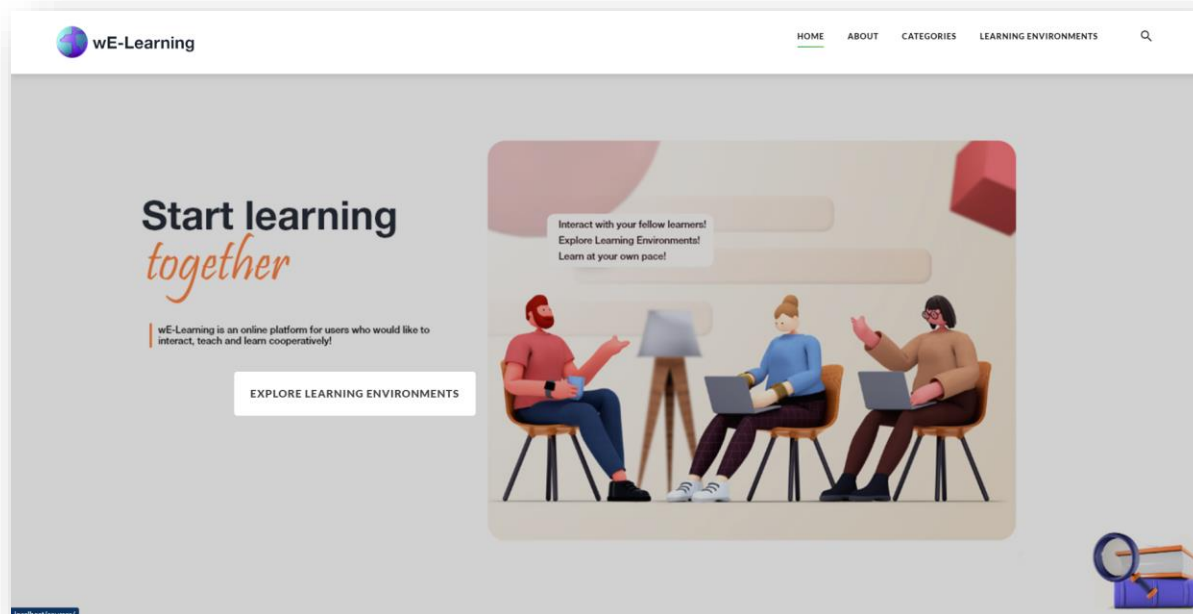
docker-compose run welearning python manage.py test

7. User manual

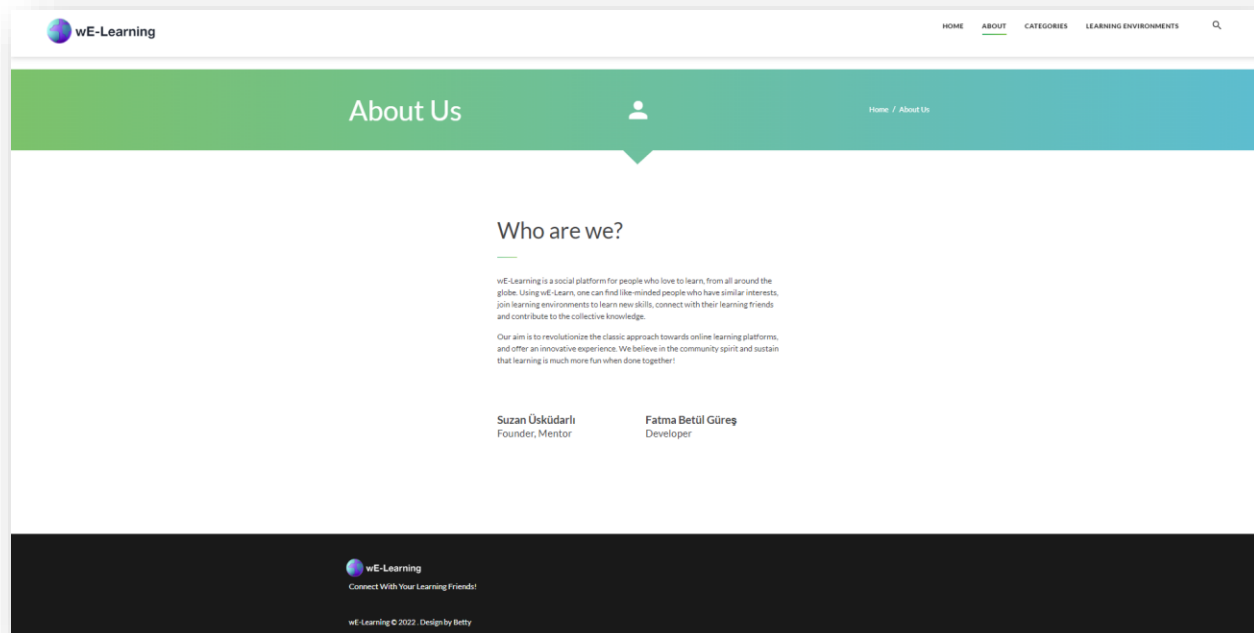
Once the user enters the url of the application, they can see the home page



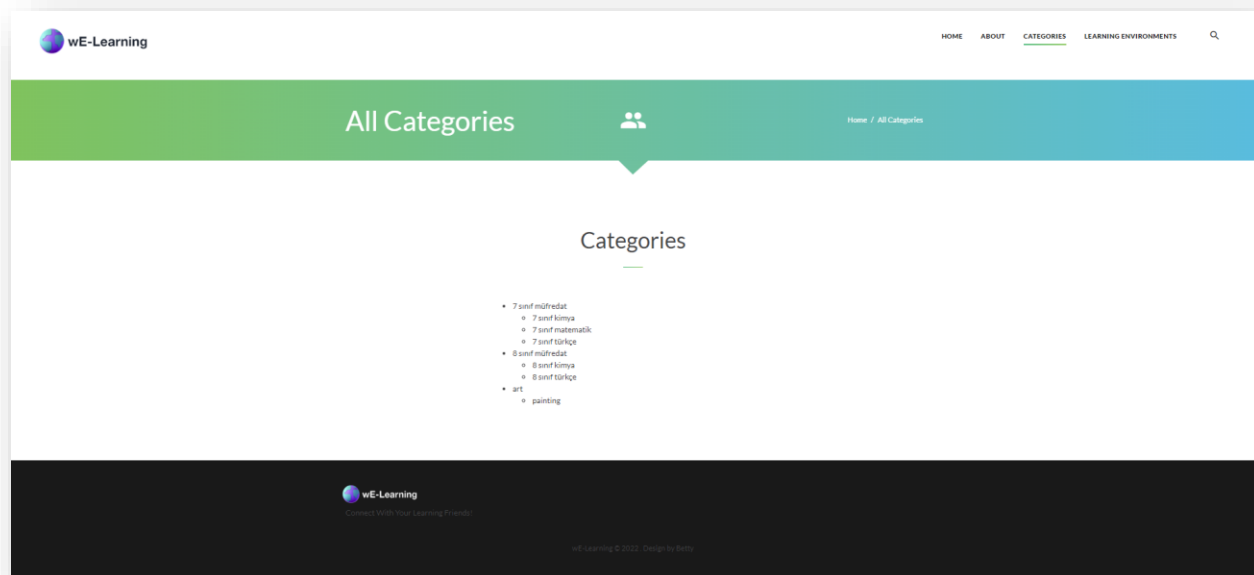
There is a button (shown in the red circle). User can click there to go to learning environments page or the user can click on any of the titles in the navbar. Also notice that is user is signed in the login/ signup links disappear from navbar.



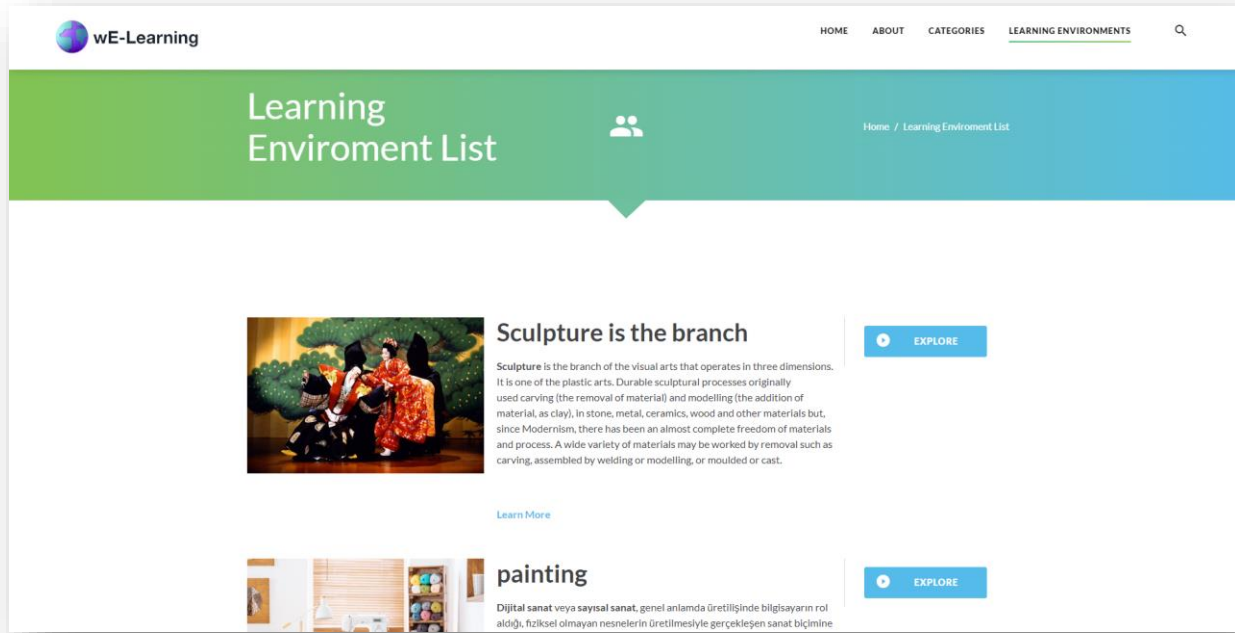
On Navbar there is About page, that explains the intents of the developed system.



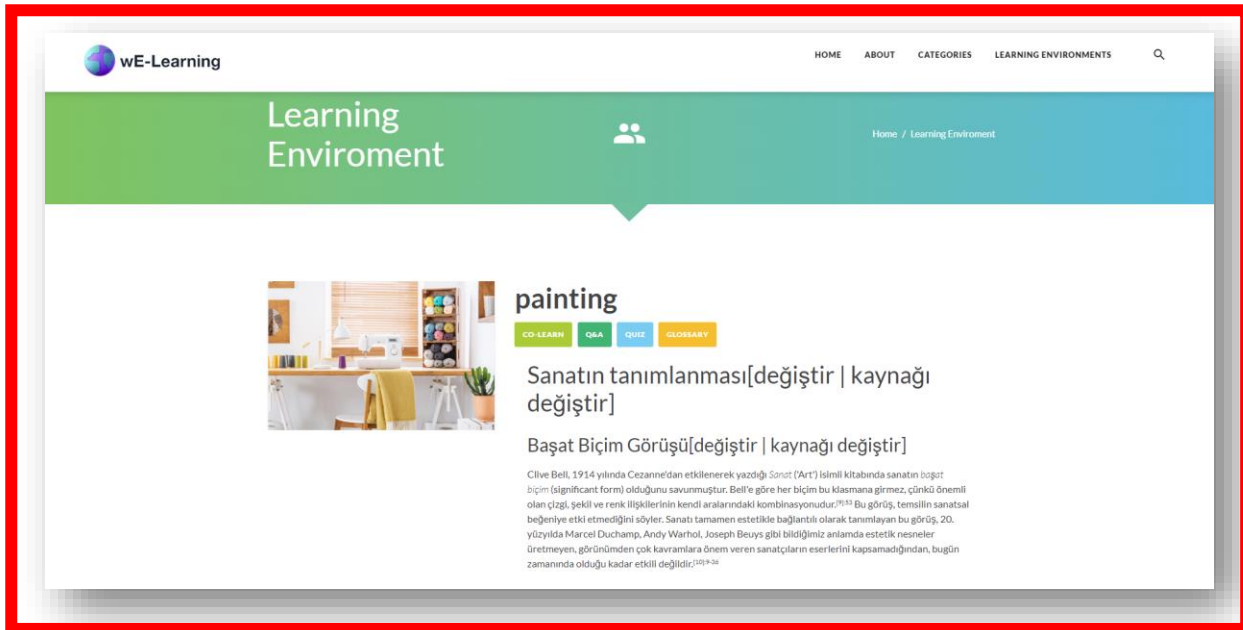
On Navbar there is Categories page, where user can see categories and the sub categories. User can click on any of the listed items and will be lead to a page where all related Learning Environment are placed.



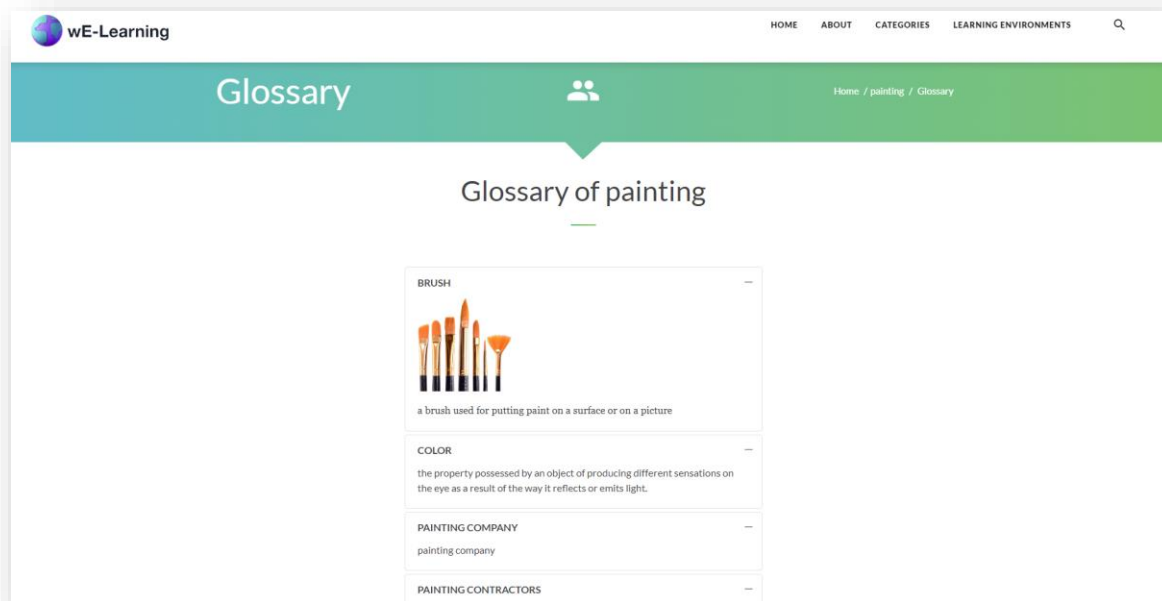
On Navbar there is learning Environment List page (also button on home page comes here). Here all learning Environments in database are listed. Next to each one, we have explore button



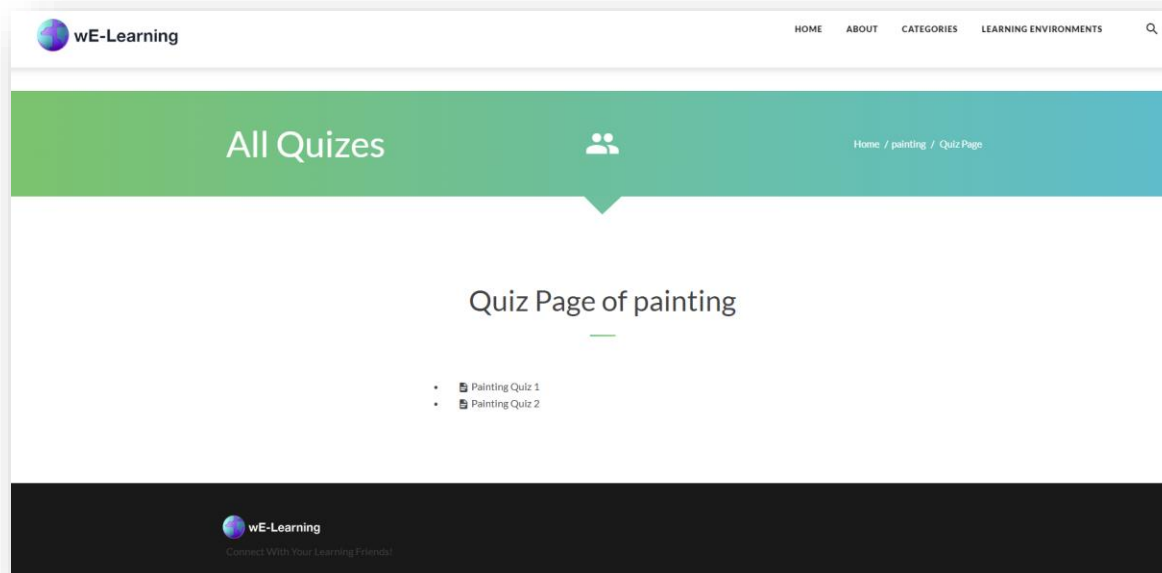
Once we click on any learning environment, we go to the details of it (clicked on painting). Here we have 4 buttons (colearn, Q&A, Quiz, Glossary)



Glossary Button: Clicking on glossary the user can see following terms and their explanations. They are in accordion so user can close and open them (maybe could prefer to guess the meaning, and then open):



Quiz Button: Leads to a page where are existing quizzes can be listed. For example, by clicking on Quiz1 the user can go to that quiz.



Quiz 1 can be seen in the image below. User can select one answer and then open the answer placed in the hidden accordion.

wE-Learning

HOME ABOUT CATEGORIES LEARNING ENVIRONMENTS

All Quizes

Home / / Quiz Page

Quiz Painting Quiz 1

01

Web analizi, online performansınız hakkında birçok bilgi sunar. Analiz araçları hangi bilgiyi sunmaz?

- ☒ A. Müşterilerinizin web sitenizde ne yaptığı
- ☐ B. Müşterilerinizin web sitenizi ziyaret etmeden önce nerede olduğu
- ☐ C. Müşterilerinizin web sitenizde ayıldktan sonra nereye gittiği
- ☐ D. Müşterilerinizin web sitenizde ne aradığı

CLICK TO SEE RIGHT ANSWER

02

Up to this point everything was public information and users Both Co-learn and Q&A buttons lead to a page where user must authenticate to go further.

wE-Learning

HOME ABOUT CATEGORIES LEARNING ENVIRONMENTS LOGIN | SIGN UP

XXXXXX

Home / xxxxxxx

Sign In

LOGIN REGISTRATION

Username

Password

SIGN IN

wE-Learning
Connect With Your Learning Friends

The screenshot shows the 'Sign Up' page of the wE-Learning platform. The header includes the wE-Learning logo, navigation links (HOME, ABOUT, CATEGORIES, LEARNING ENVIRONMENTS, LOGIN | SIGN UP), and a search icon. A green banner at the top contains the text 'XXXXXX' and a user icon. The main content area is titled 'Sign Up' and features a form with the following fields: Username, First name, Last name, Email address, Password, and Password confirmation. A green 'CREATE AN ACCOUNT' button is positioned below the form.

After authentication, the user can go back to the learning environment page (the one with red borders in the images above) and can click to colearn button, to see the corresponding colearning page. On colearning pages users can post, follow each other, message, see notification and search for users(top of page seach bar) and search for tags(compass icon on left upper corner). The users can have a convention to tag posts that include a question as: learning_environment_name+Question and when searching this tag they can find questions, and reply if they wish.

The screenshot displays the 'Painting Colearning Page' on the wE-Learning platform. The header shows the wE-Learning logo, a search bar with the placeholder 'Username', and user profile icons. The page title is 'Painting Colearning Page'. Below the title, there is a prompt 'You may add a post and share knowledge!' and a text input field labeled 'Say Something...'. An 'Image' section includes a 'Dosyaları Seç' button and a status 'Dosya seçilmedi'. A green 'Submit!' button is located below the image selection area. A post by '@admin' is shown, titled 'Painting Colearning Page Post 1', with a share icon and a count of 0. A user profile dropdown menu is visible on the right, showing 'Profile' and 'Sign Out' options.

8. Test results

Confession section: I could not realise many tests, therefore this section can be included in my lessons learned section for the course. I was intimidated by tests and the planning for testing was not well made. However, I had two attempts to try testing in Django:

```
from django.test import TestCase

from courses.models import Courses

from social.models import Post

class PostTestCase(TestCase):

    def setUp(self):

        post = Post.objects.create(body="Hello weLearning!", learning_environment_id=1,

                                   author_id=1)

    def test_learning_environment(self):

        post = Post.objects.get(learning_environment_id=1)

        self.assertIsInstance(post.learning_environment, Courses)
```

In this test, in setUp part (inbuilt function for setup of testing data) I created a post in a certain learning environment (with id 1) belonging to an author (id 1). From the post, I tried to get the learning environment it was belonging to and wanted to assert if it is an instance of the Courses model (which theoretically should be the case and the test was expected to turn out correct, but I got errors).

A second attempt was to write a test that can function (due to lack of time I tried the simplest possible.) I thought I can write a simple test for colearning app (explained at end of page 1 of this report). The test turns true as expected, however it is not a significant part for my webapp, just created to kind of understand the process.

```
from django.test import TestCase

from colearning.models import Room

class RoomTestCase(TestCase):

    def setUp(self):

        room = Room.objects.create(name="Oda1")

    def test_room_name(self):

        room = Room.objects.get(id=1)

        self.assertEqual(room.name, room.name.capitalize())
```