

SWE 530 – Assignment 1

Designing a Project with Given Requirements

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## **1. Structure of the assignment report**

### **1.1. Requirements:**

In this section, we will gather all the needs and expectations for the project. These include both functional requirements (what the system should do) and non-functional requirements (qualities the system should have, like speed or security). We will base these on the information collected during the interview. Additionally, any new requirements not covered in the initial assignment document will be added to ensure a comprehensive understanding.

### **1.2. Missing Details:**

Sometimes, not all the necessary information is obtained during the interview. In this section, We will highlight those missing details and discuss how we plan to address them. This might involve additional communication with stakeholders or making educated assumptions to fill in the gaps.

### **1.3. Diagrams:**

Diagrams provide a visual representation of how users interact with the system. We will create diagrams to illustrate different scenarios or actions users might take and how the system responds. This helps ensure a clear understanding of the system's functionality from a user's perspective.

### **1.4. Mock-up Screens:**

Mock-up screens are visual prototypes of what the system's interface might look like. We will design these screens based on the gathered requirements. These mock-ups serve as a tangible reference for how the final product will appear and how users will

navigate through it.

### **1.5. List of Entities:**

Entities represent the main objects or concepts in the system. In this section, We will list all the entities identified during the requirement analysis. For each , We will detail possible attributes (characteristics) and any other relevant details. This step is crucial for setting the groundwork for the database structure and system architecture.

By organizing the report in this structured manner, we aim to provide a comprehensive overview of the project, ensuring that all requirements are captured, potential gaps are addressed, and stakeholders have a clear visual and conceptual understanding of the proposed system.

## 2. Requirements

*Previously provided functional requirements:*

- **F1:** A workspace has an owner.
- **F2:** There should be channels inside the workspace.
- **F3:** There should be a channel named “main” for all members, but some of the channels should be protected, which means only subscribers of the channel can enter the channel.
- **F4:** In channels, there should be a task management tab for simple task management operations such as assigning tasks to users and viewing the status of the tasks.
- **F5:** People should be able to join a workspace via email and link.
- **F6:** Members of the workspace should be able to post text, media, link to the channels (if they are subscribers of that channel).
  
- **Login**
  - **F7:** Once logged in to the system, the user shall be able to update their credentials
  - **F8:** On mobile devices, the user shall be logged in for 6 months until a new password is set
- **Registration**
  - **F9:** The user shall be given a pre-defined username and password once they click the invitation link
  - **F10:** On the registration screen, the user shall see for which workspace they are invited
  - **F11:** The user shall be able to customize their login credentials in the registration period
  - **F12:** The user shall be able to enter this information on the registration screen: username, password, firstname, lastname. All required.

- **F13:** Username must be unique
- **F14:** The user shall be asked for a password change every 6 months for security reasons
- **F15:** The user shall be notified via email once they are registered to the system
- **User permissions**
  - **F16:** The system must have the following roles with the attached authority
    - \* **F16.1:** Owner:
      - They can create the workspace or channels and invite new members with an external invitation link
      - They can remove a person from a channel or workspace completely
      - They can assign roles to other users
    - \* **F16.2:** Manager
      - They can remove a person from the channel (owner excluded)
      - They can respond to the join channel requests by other users
      - They can transfer the manager role to others
      - They cannot leave a channel that they moderate
    - \* **F16.3:** User
      - Owner and manager role extend this user role and its authority
      - Users can message, create, assign, close, and comment on tasks
      - Users can create video or voice calls

*Non-functional requirements:*

- **NF1:** The system must work on both Android and IOS mobile phones.
- **NF2:** The system shall ask for permission if an update is planned.
- **NF3:** The system shall support these languages: English, German, French, Turkish, Chinese, Russian, Arabic.
- **NF4:** The system shall ask for permission if an update is planned.
- **NF5:** Users shall receive notifications for new messages, mentions, or assigned tasks.

- **NF6:** Notification preferences (e.g., email, in-app) shall be customizable by the user.
- **NF7:** Notifications shall include a brief summary of the new activity.
- **NF8:** All communication within the system, including messages and file transfers, shall be encrypted.
- **NF9:** The system shall have a secure password recovery process for users who forget their passwords.
- **NF10:** Access to certain features (e.g., workspace creation) shall require multi-factor authentication for added security.
- **NF11:** Users with administrative roles shall have access to detailed usage reports.
- **NF12:** The system shall log user activities for auditing purposes.
- **NF13:** Users shall be able to report inappropriate content or behavior, triggering a review process by administrators.
- **NF15:** Users shall have the option to synchronize tasks and deadlines with external calendar applications.
- **NF16:** Integration with video conferencing tools for scheduled calls shall be available.
- **NF17:** The user interface shall be designed with accessibility in mind, adhering to WCAG guidelines.
- **NF18:** Users shall be able to navigate and perform essential functions using screen readers.
- **NF19:** Color schemes and font sizes shall be customizable to accommodate various user preferences.

### 3. Missing Details

- (i) The original requirements primarily focus on the structure and basic functionalities of the workspace and channels.
- (ii) The additional requirements cover aspects related to user authentication, registration, user permissions, user interactions, and search/filter functionalities.
- (iii) No significant missing details are observed in the original requirements.
- (iv) The additional requirements provide a more comprehensive view of user-related actions, enhancing the overall user experience.



## 4. Diagrams

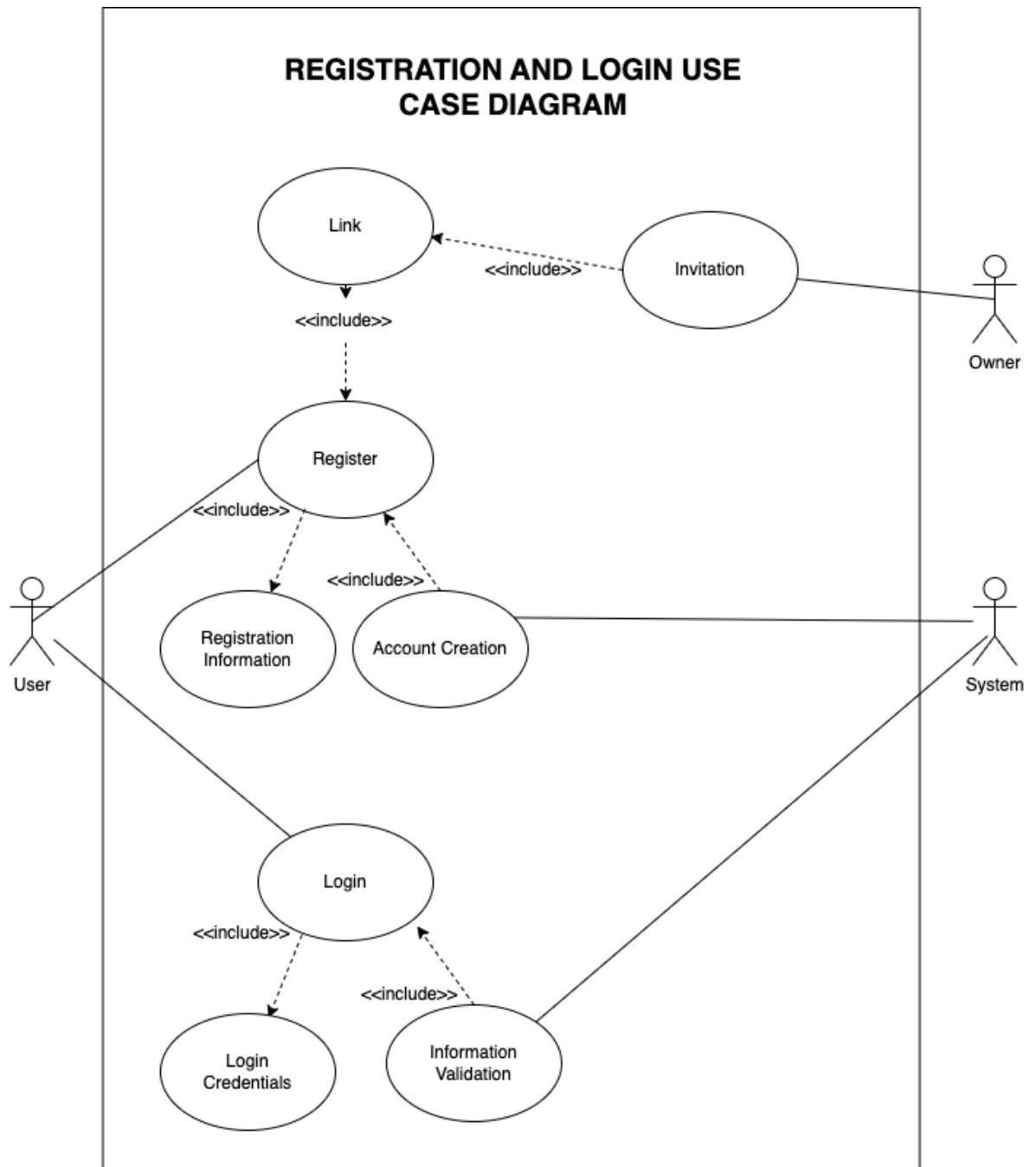


Figure 4.1. Use Case Diagram: Login

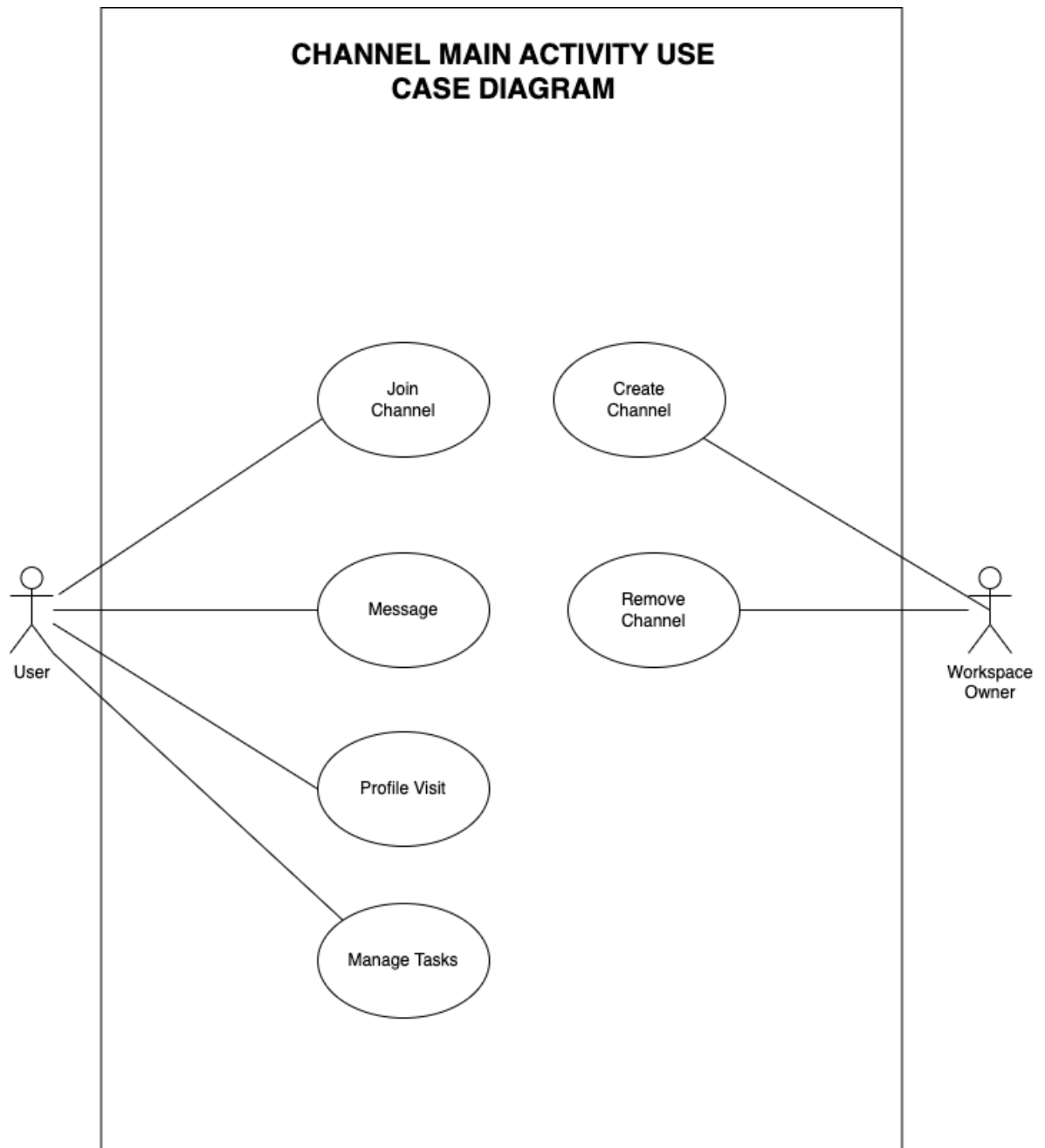


Figure 4.2. Use Case Diagram: Channel

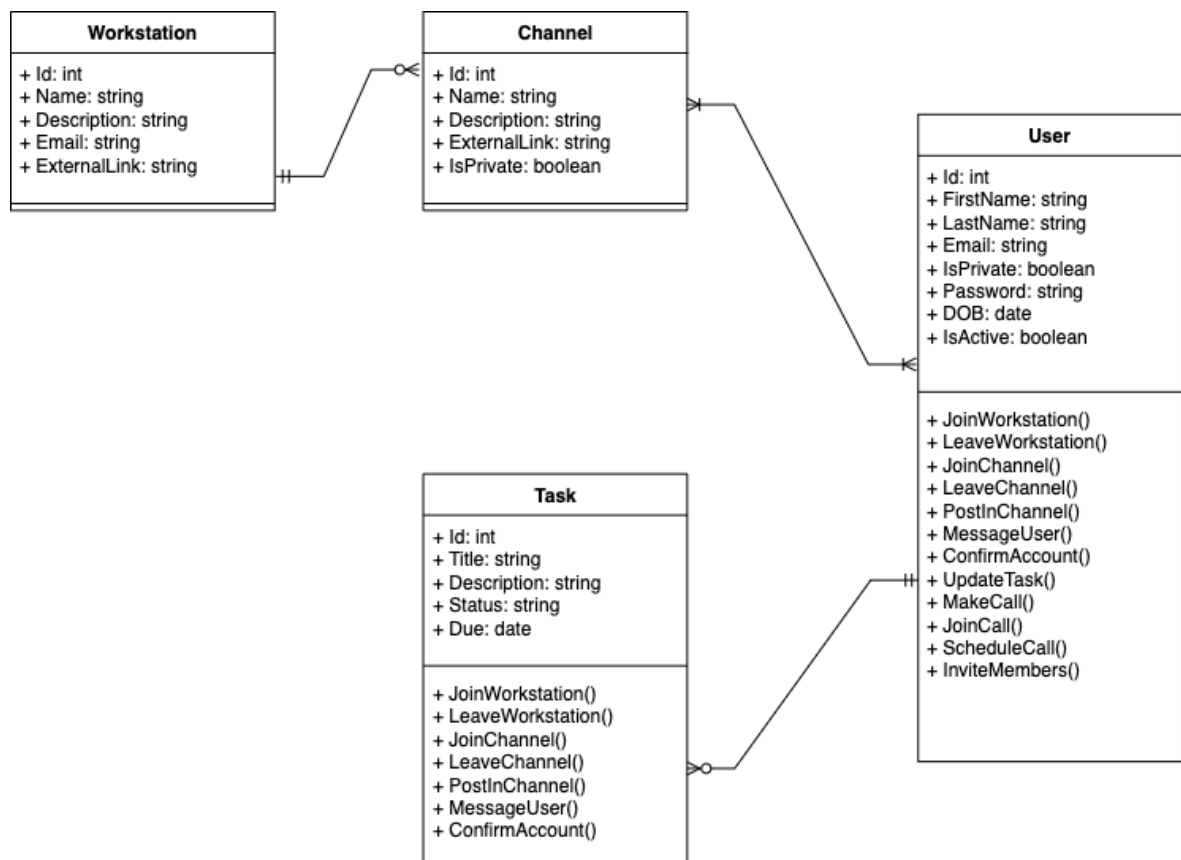


Figure 4.3. Class Diagram

## 5. Mock-up Screens

SIGNUP		WORKZONE
Join for the workspace:		<i>My Company</i>
Firstname	Lastname	
<input type="text"/>	<input type="text"/>	
Username	Password	
<input type="text"/>	<input type="password"/>	
<input type="button" value="REGISTER"/>		

Figure 5.1. Signup

LOGIN		WORKZONE
Join for the workspace:	<input type="text"/>	
Username	Password	
<input type="text"/>	<input type="password"/>	
<input type="button" value="LOGIN"/>		

Figure 5.2. Login

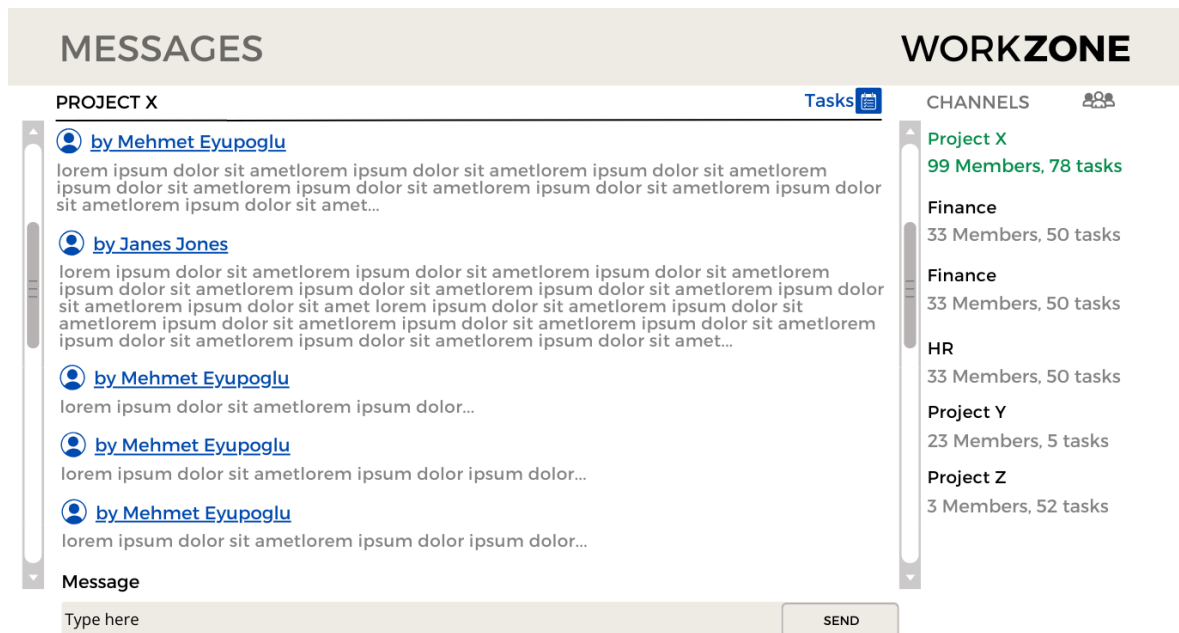


Figure 5.3. Channels

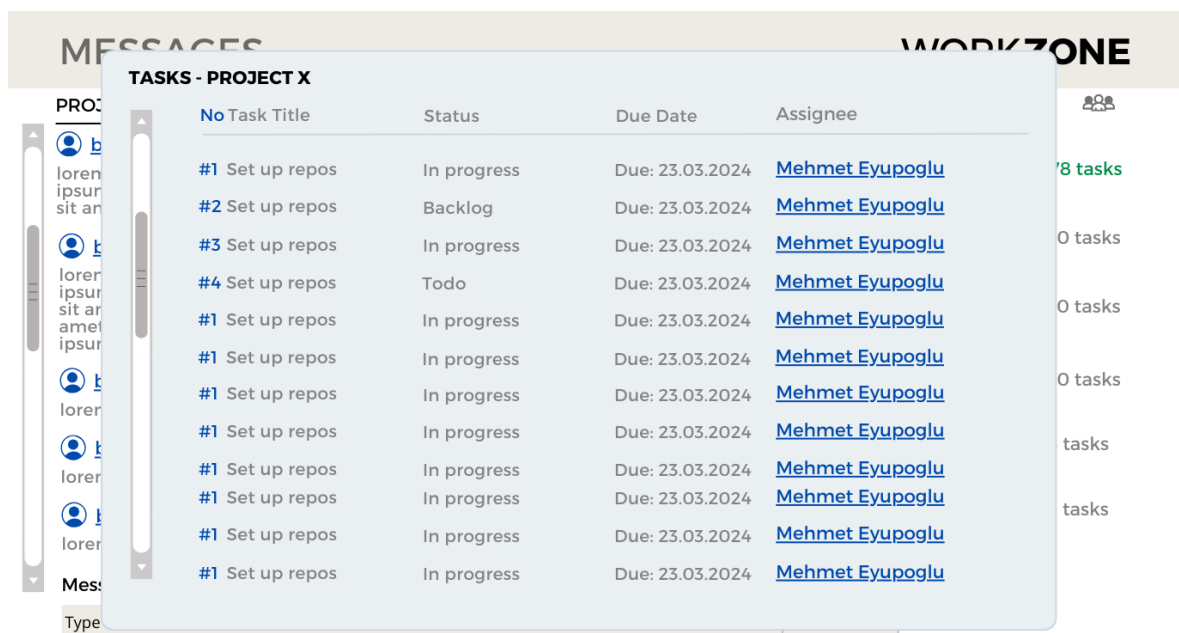


Figure 5.4. Tasks

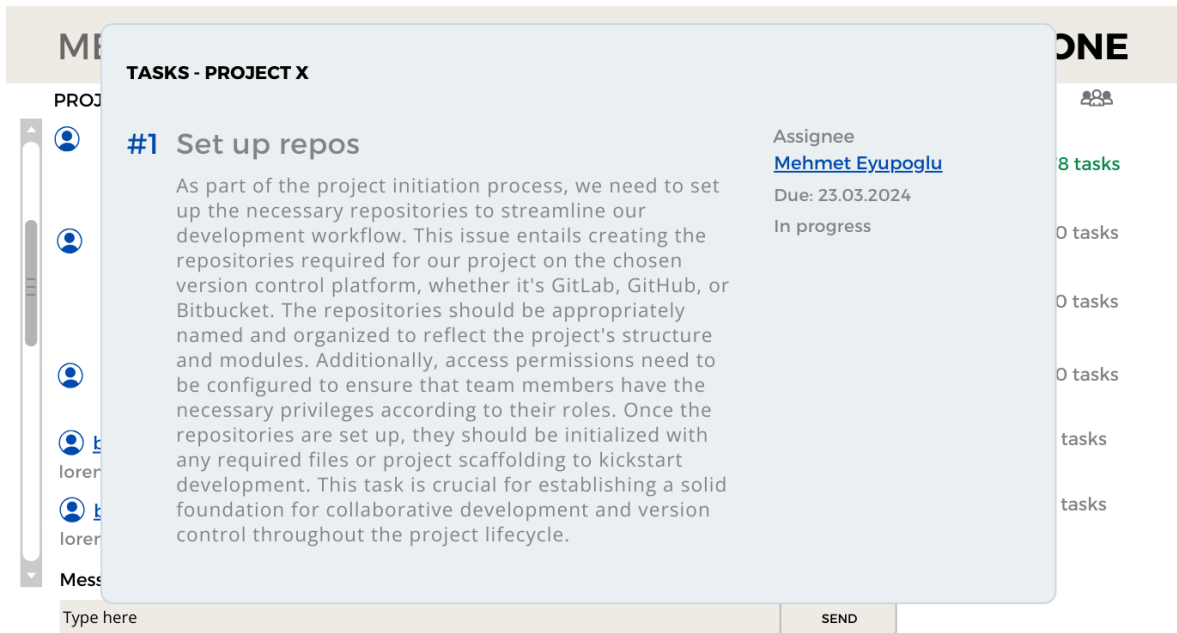


Figure 5.5. Individual Task

UPDATE/DELETE ACCOUNT		WORKZONE
First Name	Last Name	
Mehmet	Eyupoglu	
Username	Password	
meyupoglu123	test1234	
Age	Email	
32	test@test.com	
<input type="button" value="UPDATE"/> <input type="button" value="DELETE"/>		

Figure 5.6. Update account



CREATE CHANNEL

WORKZONE

Name

Project X

Short Description

This channel contains tasks and communication about Project X.

Logo

Public?

No

CREATE

Figure 5.7. Channel Creation

VISIT PROFILE

WORKZONE

Mehmet Eyupoglu

username: meyupoglu123

email : test@test.com

CHANNELS

Classical Music Lovers

Classimo

Classiway

20 members

5 members

30 members

March 1, 2024 Last Active

March 1, 2023 Last Active

March 1, 2024 Last Active

TASKS

Task 1

Task 2

Task 3

Lorem ipsum dolor sit amet lorem dolor sit amet ...

Lorem ipsum dolor sit amet lorem dolor sit amet ...

Lorem ipsum dolor sit amet lorem dolor sit amet ...

March 1, 2024

March 1, 2024

March 1, 2024

Figure 5.8. Profile

## 6. List of Entities

### 6.1. Workspace:

- `id`: INT (Primary Key)
- `name`: VARCHAR(255) NOT NULL
- `description`: TEXT
- `created_at`: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- `owner`: INT (Foreign Key REFERENCES Users(id))
- `external_link`: VARCHAR(255)
- `is_private`: BOOLEAN DEFAULT FALSE
- `logo`: VARCHAR(255)

### 6.2. Channel

- `id`: INT (Primary Key)
- `name`: VARCHAR(255) NOT NULL
- `description`: TEXT
- `created_at`: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- `creator`: INT (Foreign Key REFERENCES Users(id))
- `external_link`: VARCHAR(255)
- `is_private`: BOOLEAN DEFAULT FALSE
- `logo`: VARCHAR(255)

### 6.3. User

- `id`: INT (Primary Key)
- `firstname`: VARCHAR(50) NOT NULL
- `lastname`: VARCHAR(50) NOT NULL
- `email`: VARCHAR(255) UNIQUE NOT NULL

- password: VARCHAR(255) NOT NULL
- date\_of\_birth: DATE
- profile\_picture: VARCHAR(255)
- created\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- updated\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- is\_active: BOOLEAN DEFAULT TRUE

#### 6.4. Role:

- id: INT (Primary Key)
- name: VARCHAR(50) NOT NULL
- description: TEXT

#### 6.5. Message:

- id: INT (Primary Key)
- message: TEXT NOT NULL
- author: INT (Foreign Key REFERENCES Users(id))
- created\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- updated\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP

#### 6.6. Task:

- id: INT (Primary Key)
- title: VARCHAR(255) NOT NULL
- description: TEXT
- status: VARCHAR(50)
- assignee: INT (Foreign Key REFERENCES Users(id))
- created\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- updated\_at: TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- due\_date: TIMESTAMP

### 6.7. Task Comment:

- `id:` INT (Primary Key)
- `comment:` TEXT NOT NULL
- `author:` INT (Foreign Key REFERENCES Users(id))
- `created_at:` TIMESTAMP DEFAULT CURRENT\_TIMESTAMP
- `updated_at:` TIMESTAMP DEFAULT CURRENT\_TIMESTAMP