

Microsoft Engage 2021

Teamix

Sharanya Mukherjee
12th July, 2021

V1.0.0



Project Overview

Teamix is a fully functional clone of Microsoft Teams made using Agile development methodologies, as a part of the Microsoft Engage 2021 program.

Introduction

Having an excellent team space is key to being able to make creative decisions and communicate with one another. Shared workspace software makes this much easier to achieve, especially if a particular team is based in a very large company, has many remote employees, or is made up of a significant number of team members. Keeping these in mind, introducing to you Teamix, a desktop application to effortlessly communicate and collaborate with your team remotely.

Tools and Technologies used

Teamix is a desktop application made with `electron.js`. There is also a central server and a database in a typical three tier architecture system. The app and the server communicate through http requests and follow RESTful standards.

Backend service:

- PostgreSQL for database.
- Node.js
- Jitsi Web RTC for video calling



Frontend service:

- HTML
- CSS
- Javascript
- Electron to package the desktop application

Project Methodology

The software was developed using **agile methodology**. This was done to ensure that the main focus was on the software product. The exact list of features were not exactly known since the start and hence it was very necessary that the whole process was able to accommodate change easily.

The project was released in 2 sprints, and each sprint was further divided into 3 phases-

1. Planning and prototyping: I used a method of prototyping by first designing the UI on Figma and then after final approval, the implementation of it on the desktop application
2. Implementation
3. Testing and review

First Sprint

Starting Date: 21st june, 2021

End Date: July 3rd, 2021

Features Released: User Login / Signup, Team creation, post creation

Second Sprint

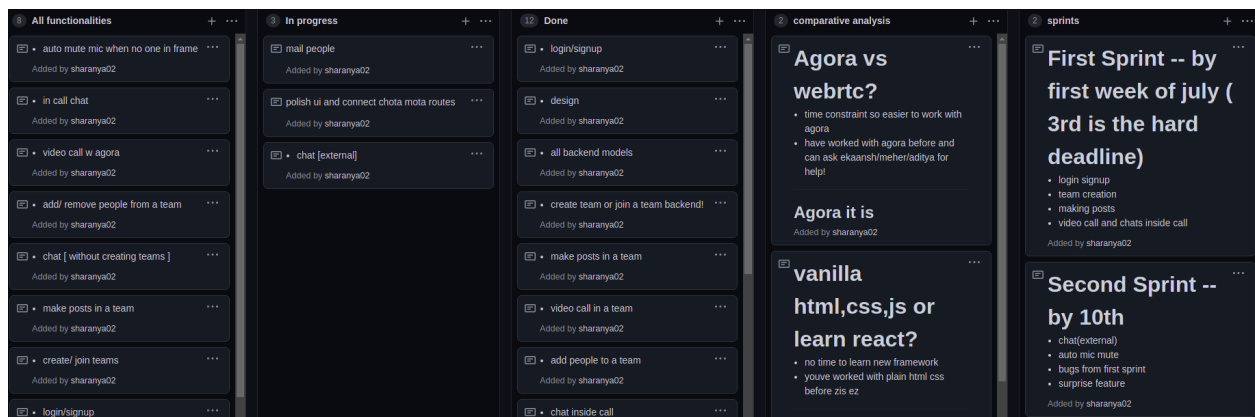
Starting Date: July 3rd, 2021

End Date: July 11th, 2021

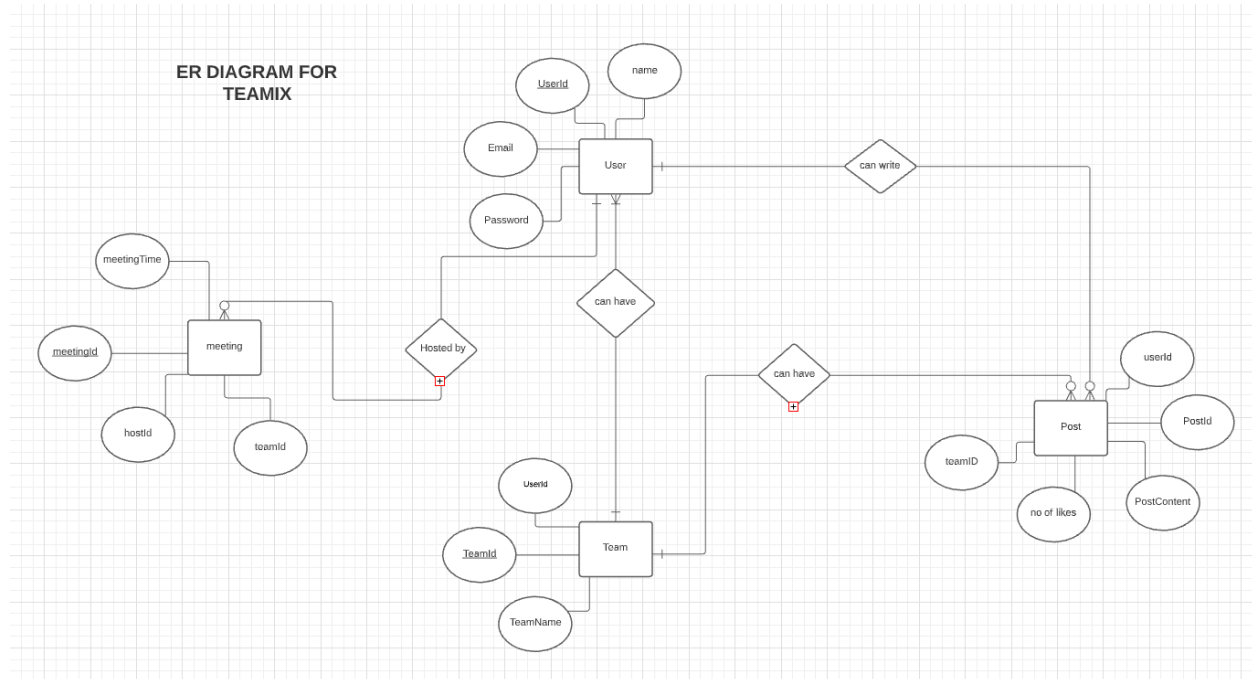
Features Released: Video calling with chat, Chatbot, ironing out bugs

After each sprint, I discussed my progress with my mentors - **Mr. Saket Mrinal** and **Mr. Kushal Majmundar**, and improved my project based on their feedback.

Github Project Kanban Dashboard was used to maintain and track the project.



ER Diagram



System Features

1. User Login/ Signup

1.1 Description: Users can securely login with their email id and password used for creating an account on Teamix

1.1.1 Input: Name, email ID, password for account creation, and email ID and password

1.1.2 Output: Redirect if successful login/ account creation and error message displayed if wrong details entered.



2. Team creation

2.1 Description: User can create a Team to start collaborating and communicating with other team members

2.1.1 Input: Team name

2.1.2 Output: Team ID which can be copied and sent to other team members to be added.

3. Team joining

3.1 Description: Join a team to start collaborating and communicating with your team.

3.1.1 Input: Team ID of the team you want to join

3.1.2 Output: Redirected to your team page if team ID is correct.

4. Delete a team

4.1 Description: Delete a team made by you.

5. Chatbot

5.1 Description: A chatbot to guide you through if you get stuck !

6. Create/ Delete Posts

6.1 Description: You can create or delete and like posts inside a team. You can also view posts made by other team members inside the team. A notification post is automatically made when a meeting is started.



7. Start a video meeting

7.1 Description: You can start a video meeting inside a team.
Inside the video call you can:

- Change your background
- Mute your mic
- Turn off your video
- Share your screen
- Invite people to the meeting through link
- Raise your hand
- Toggle Tile view

8. Chat during video call.

8.1 Description: Chat with other team members during video call.

9. View Team Details.

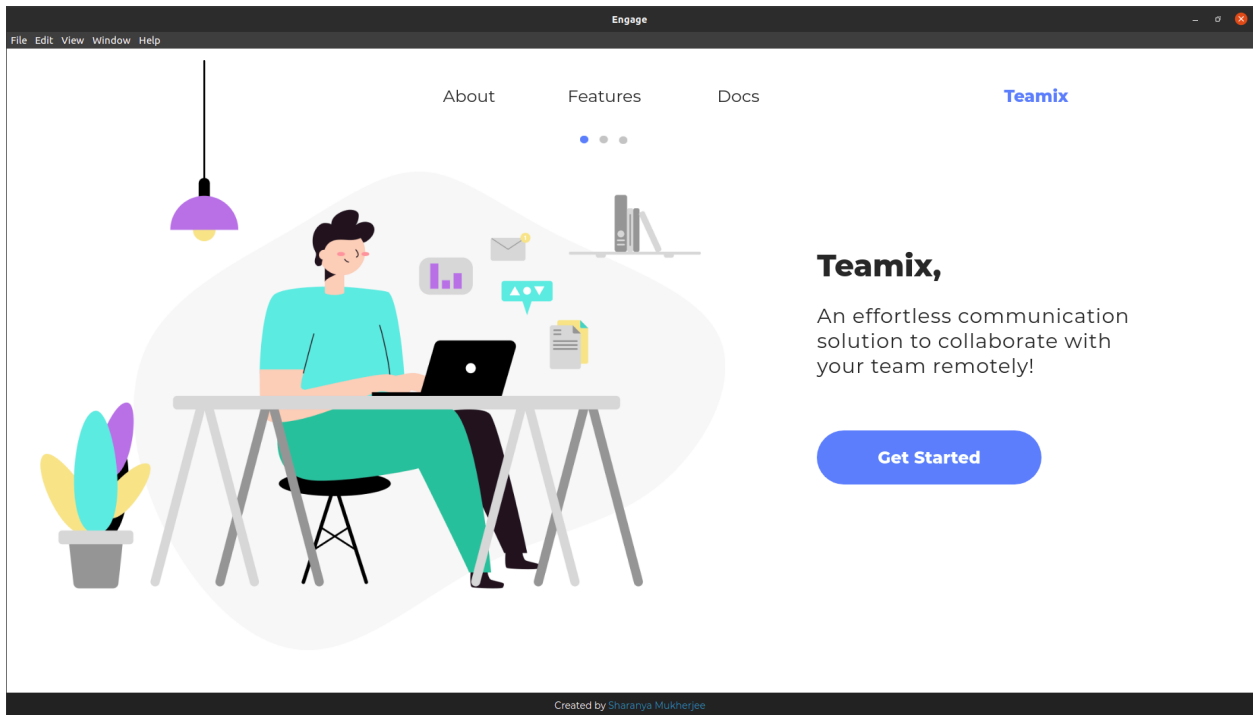
9.1 Description: View all the teams you are a part of on your home page. You can also view details of every individual team from the teams info page.

10. View account details

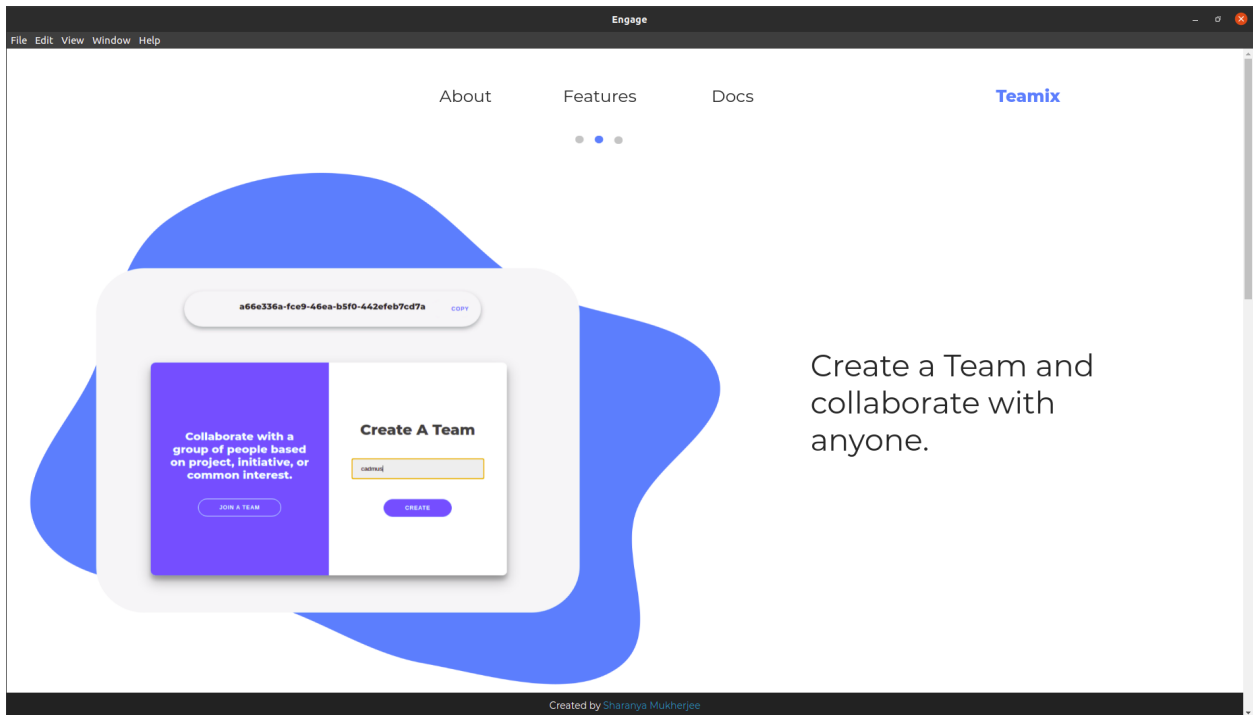
10.1 Description: View your account details.

Prototype of User Interfaces

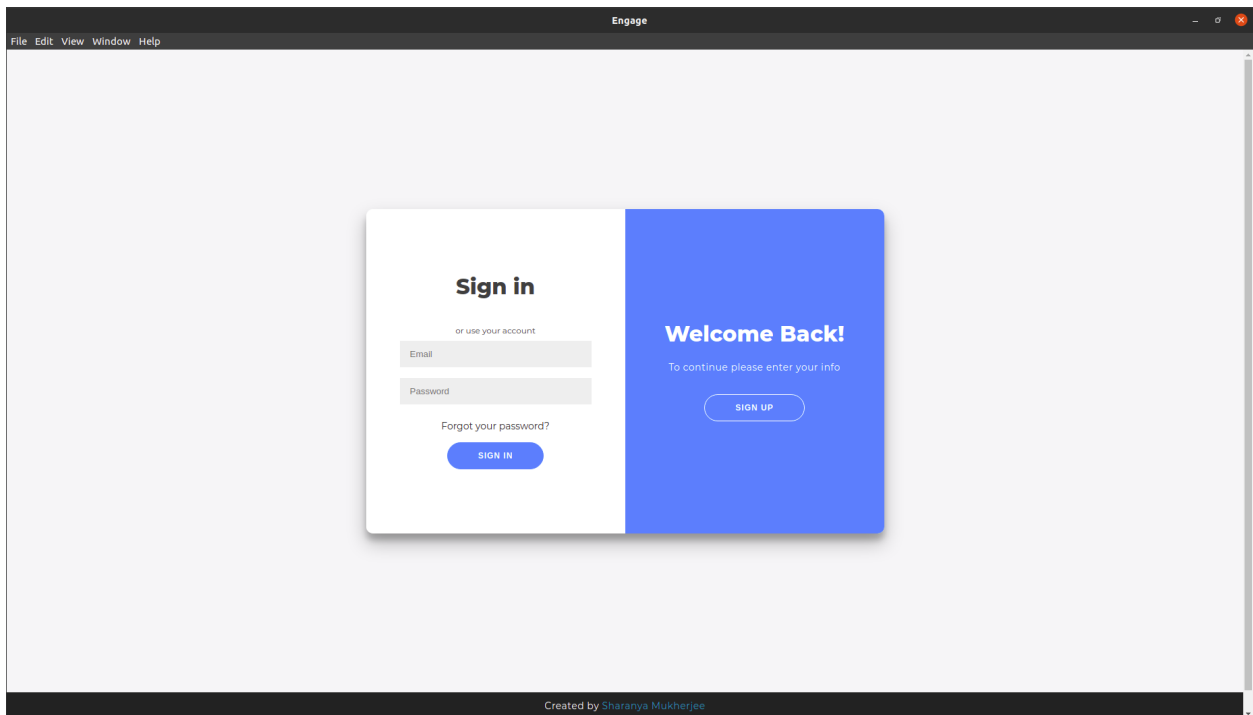
Landing Page



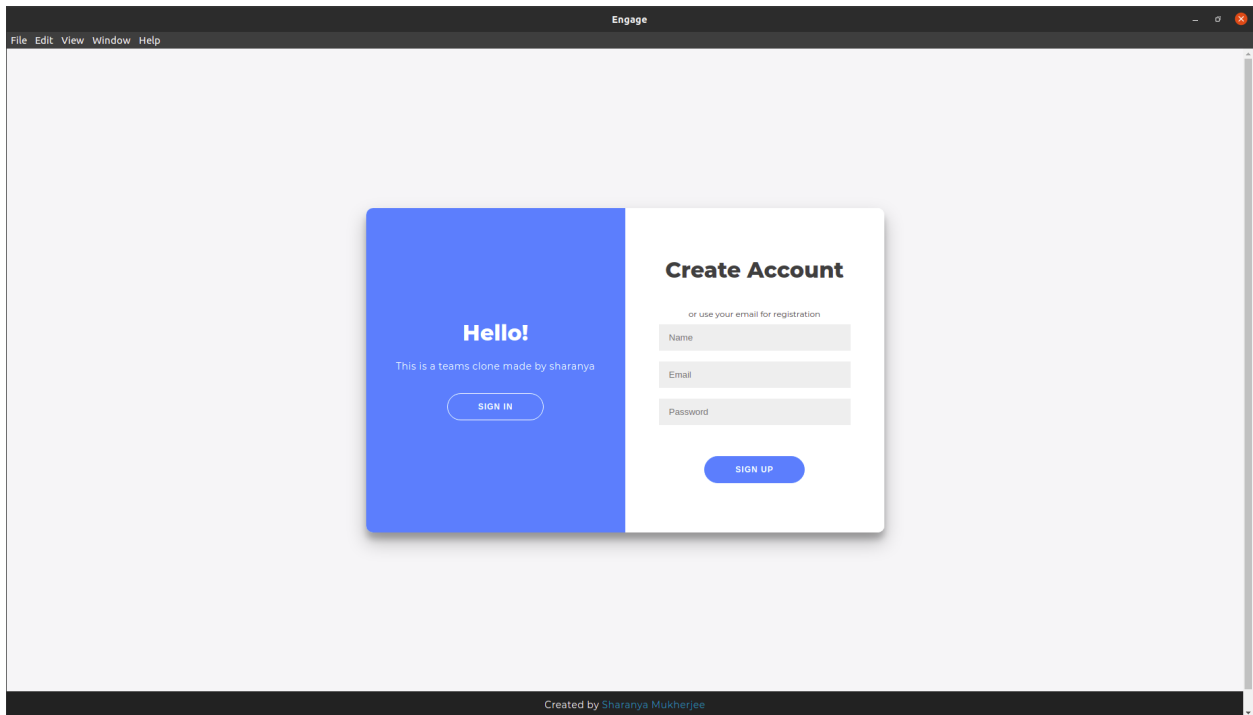
Features page



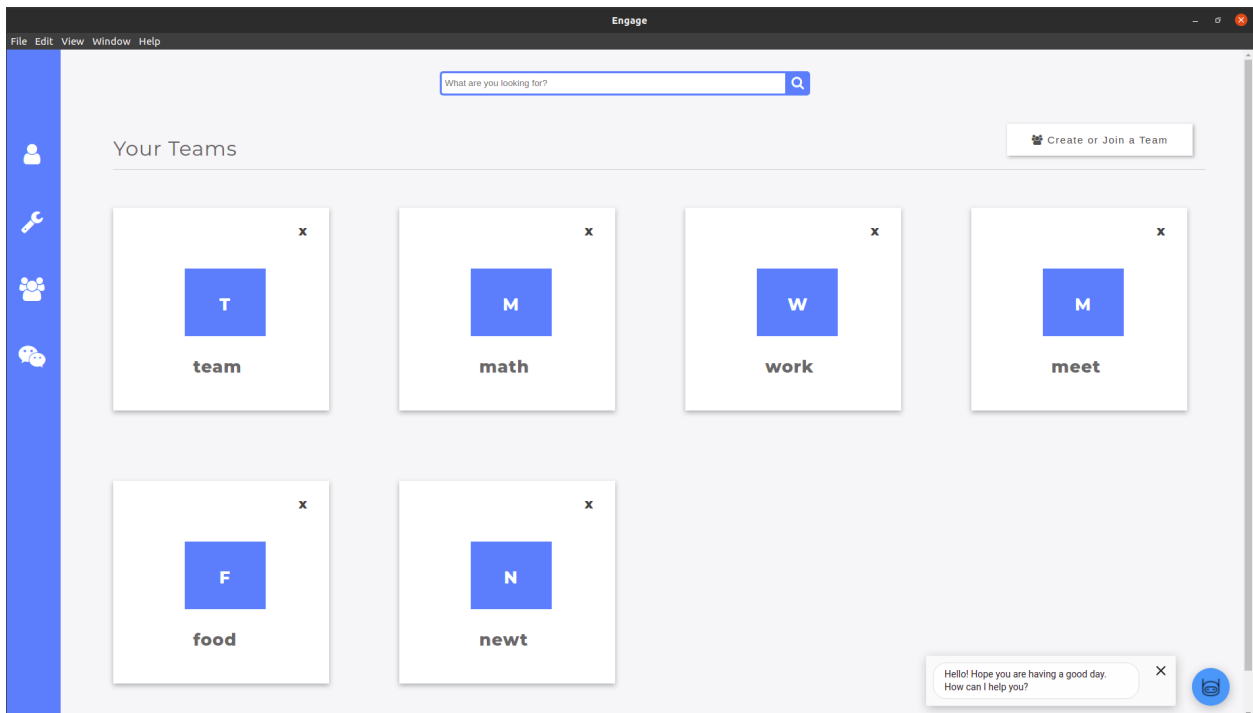
Login Page



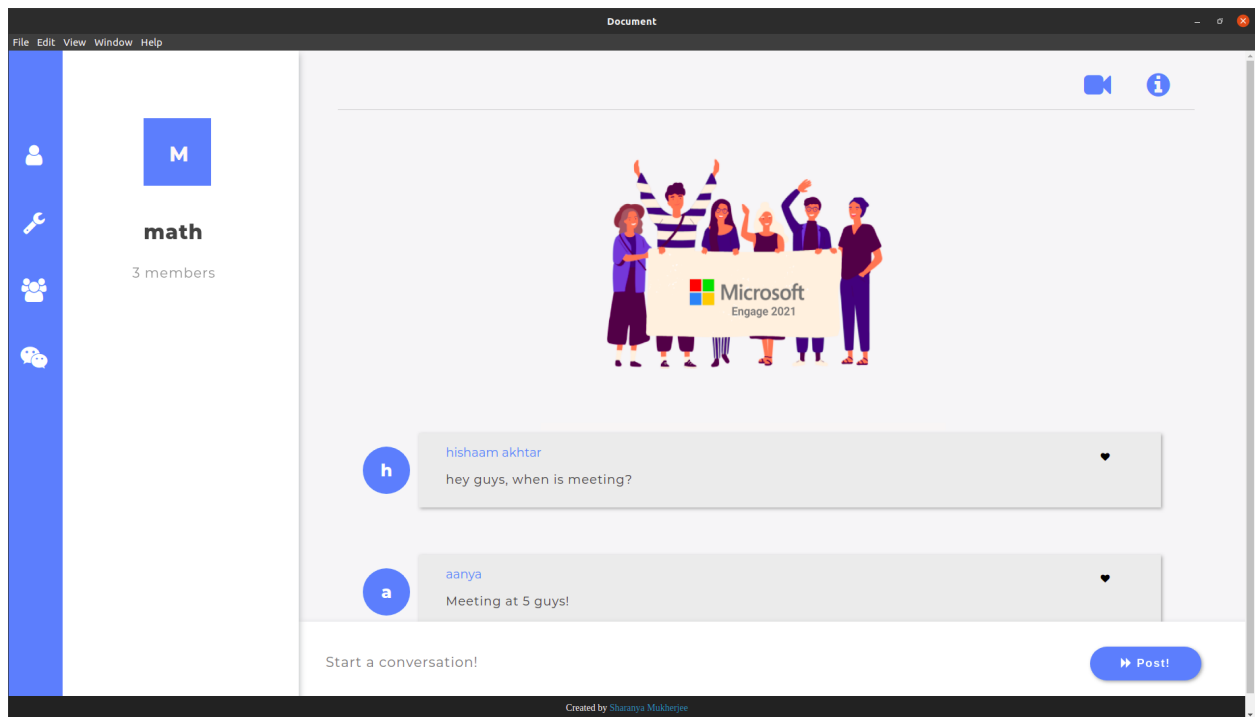
Sign up page



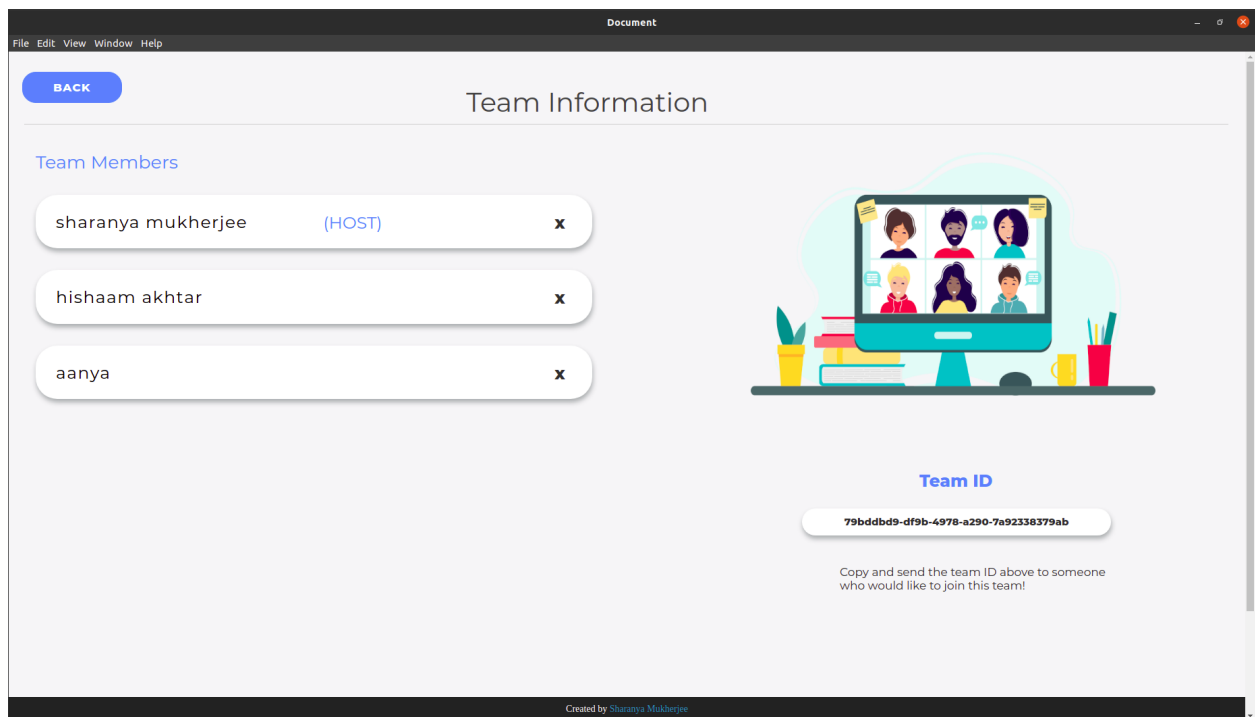
Home page



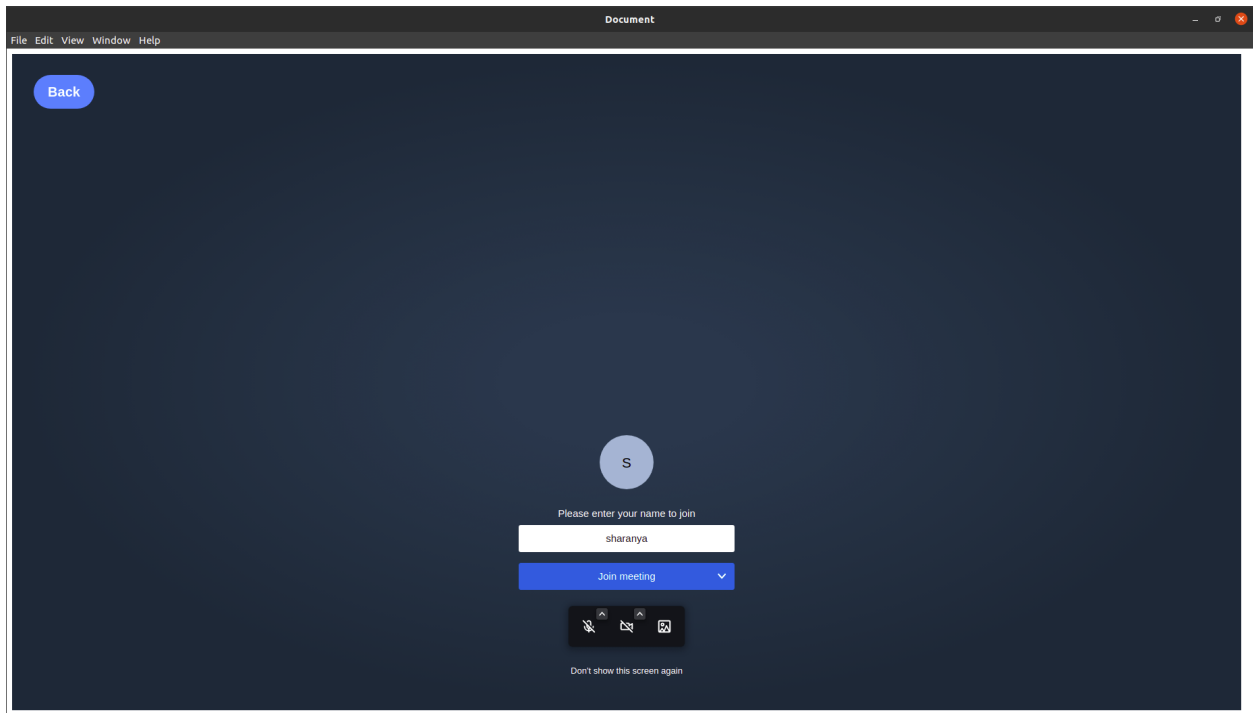
Teams Page



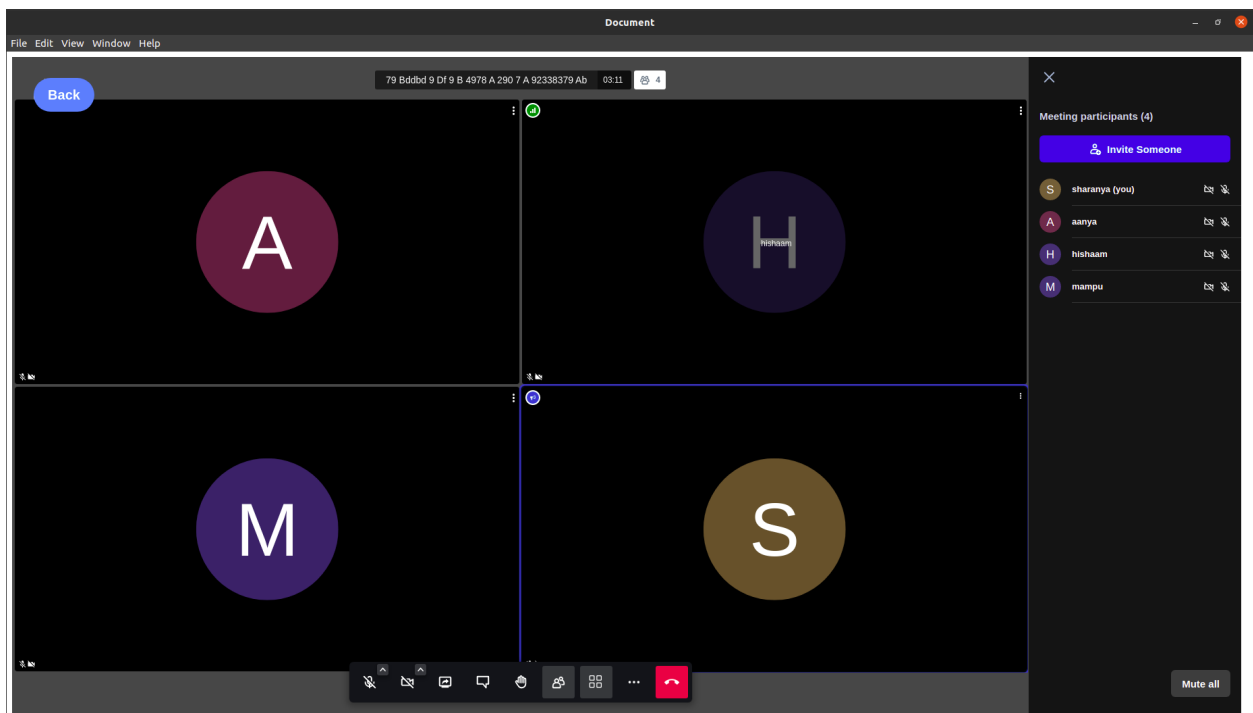
Team Information Page



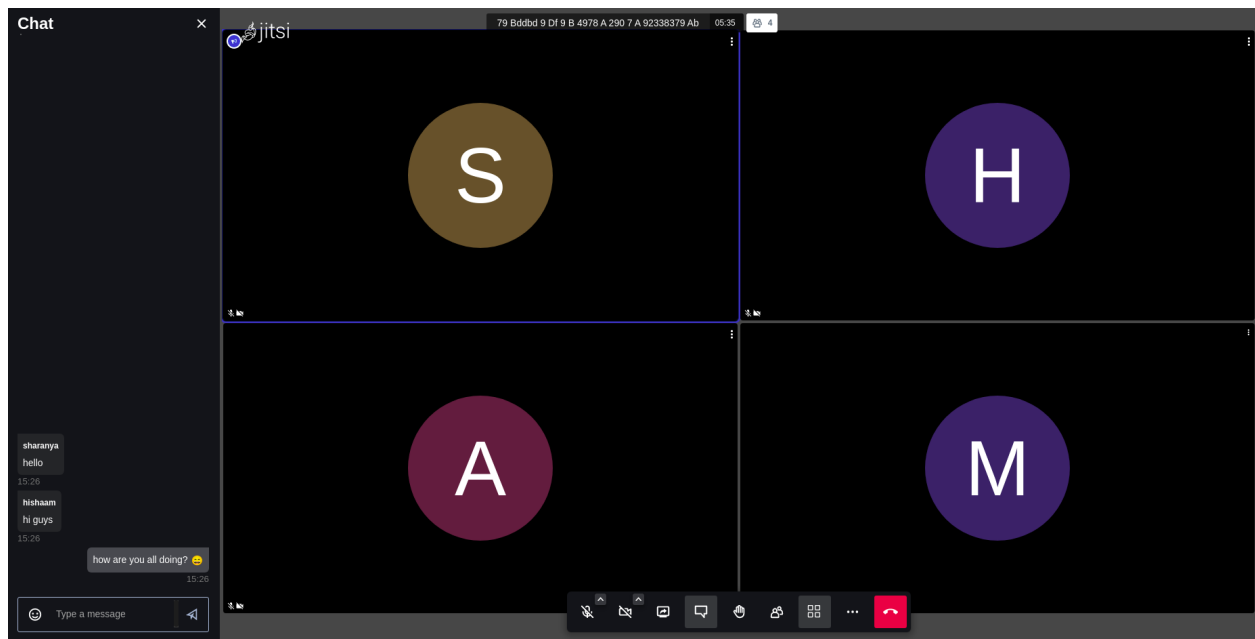
Joining the video call



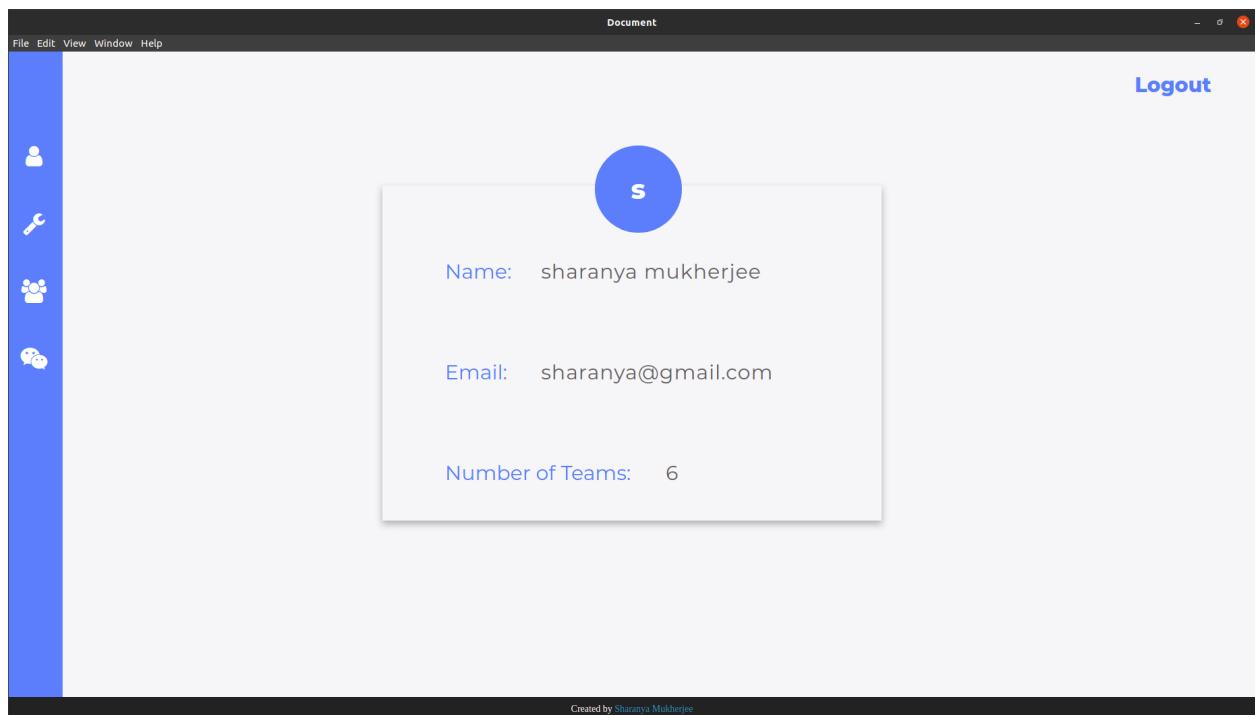
Inside the video call



Chat in a meeting



User Account Details



Testing

Manual Testing

TEAMIX	Project Name:Teamix	MICROSOFT ENGAGE 2021				
	Module Name: 1.0	Test Designed date: 8/6/2021				
	Release Version: 1.0.0	Test Executed by: Sharanya Mukherjee				
		Test Execution date: 8/6/2021				
Test Case#	Test Title	Test Steps	Test Data	Expected Result	Actual Result	Status
1	Test landing page	On opening the app the landing page should open	NA	Landing page opening on starting app	Landing page opened	success
2	Successful Signup	On signup, account should be created.	Name, email ID, password	Redirects you to home page	Redirected to home page	success
3	Successful Login	User provides details and logs in	email ID, password	Redirects you to home page	redirected to home page	success
4	Unsuccessful login	User provides wrong details	email ID, wrong password	Displays error message	Displayed error message	success
5	Creating a team	User enters name of team and hit enter button	Team name	Team ID displayed	Team ID was displayed	success
6	joining a team	user enters team ID of team they want to join	Team ID	Team appears on their home	Team appeared on home	success
7	opening a team page	user clicks on team name and that team opens	NA	Correct Team page opens	Correct Team page opened	success
8	Make Posts in a team	User makes a post in a team	post content	Post is displayed on teams page	post got displayed on teams	success
9	Delete post in a team	User deletes a post made by them in a team	NA	Posts deleted from team	post deleted from team	success
10	Starting video call	User starts a video call by clicking the button	NA	Video call starts	Video call started	success

Unit Testing

The automated unit testing was done with Chai and Mocha. A total of 10 routes were tested. Here is the screenshot below of the tests passing-

```

sharanya@sharanya-VivoBook-15-ASUS-Laptop-X507UAR:~/Desktop/engage (copy)$ npm run test

> backend@1.0.0 test
> standard && mocha tests/* --exit

# Posts Test Suite
Info: Connected To Database
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:04 +0000] "POST /api/v1/user/signup HTTP/1.1" 201 448
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:04 +0000] "POST /api/v1/team/create HTTP/1.1" 201 231
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:04 +0000] "POST /api/v1/post/create HTTP/1.1" 201 356
  ✓ # Post Creation Test (1172ms)
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:04 +0000] "POST /api/v1/post/details/fetch HTTP/1.1" 200 646
  ✓ # Post Details Fetch Test
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:04 +0000] "POST /api/v1/post/delete HTTP/1.1" 201 64
  ✓ # Post Delete Test

# Teams Test Suite
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/user/signup HTTP/1.1" 201 440
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/team/create HTTP/1.1" 201 227
  ✓ # Team Creation Test (262ms)
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/team/details/fetch HTTP/1.1" 200 656
  ✓ # Team Details Fetch
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/team/delete HTTP/1.1" 201 64
  ✓ # Team Delete Test

# Test Suite
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "GET / HTTP/1.1" 200 15
  ✓ # Test description

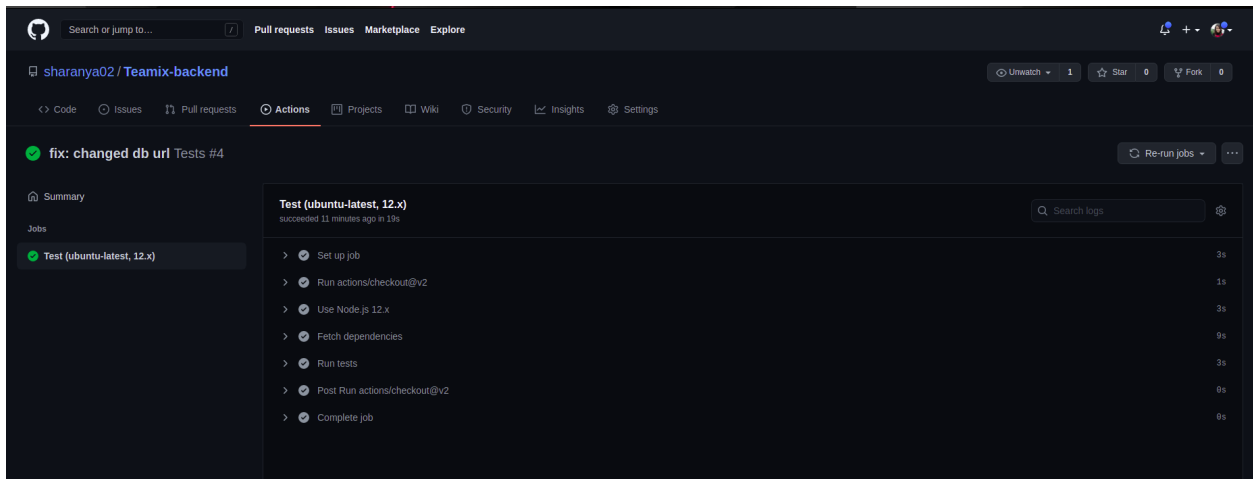
# User Test Suite
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/user/signup HTTP/1.1" 201 454
  ✓ # Signup Test (146ms)
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/user/login HTTP/1.1" 200 456
  ✓ # Login Test (114ms)
Info: ::ffff:127.0.0.1 - - [13/Jul/2021:13:02:05 +0000] "POST /api/v1/user/details/fetch HTTP/1.1" 200 382
  ✓ # User Details Fetch Test

10 passing (2s)

```

Deployment

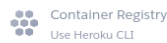
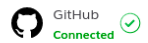
The backend is deployed using Heroku. The deployment follows a CI/CD pipeline in which, a successful push to the main branch of the github repository runs a github action which in turn runs a series of unit tests which were written, and only on passing the tests successfully the latest code is deployed to Heroku.



Deployment method



Heroku Git
Use Heroku CLI



Container Registry
Use Heroku CLI

App connected to GitHub

Code diffs, manual and auto deploys are available for this app.

Connected to [sharanya02/Teamix-backend](#) by [sharanya02](#)

[Disconnect...](#)

Releases in the [activity feed](#) link to GitHub to view commit diffs

Automatically deploys from [main](#)

Automatic deploys

Enables a chosen branch to be automatically deployed to this app.

You can now change your main deploy branch from "master" to "main" for both manual and automatic deploys, please follow the instructions [here](#).

Automatic deploys from [main](#) are enabled

Every push to [main](#) will deploy a new version of this app. **Deploys happen automatically:** be sure that this branch in GitHub is always in a deployable state and any tests have passed before you push. [Learn more](#).

☒ Wait for CI to pass before deploy

Only enable this option if you have a Continuous Integration service configured on your repo.

[Disable Automatic Deploys](#)



Future Scope

Future Scope of my project includes new feature additions as well as updates to the already existing ones.

- I plan to integrate sendgrid api to send mails when a meeting is started or when they are added to a team.
- I also plan to implement a quiz section inside a team which can be used to increase the interaction inside the team.
- Another feature I will be working on is a file storage system inside a team to upload and view files inside a team.

