
Microsoft Teams Clone

12th July, 2021

OVERVIEW

The project aimed at building a team clone as the name suggests allowing the user to join a meet and chat through text as well as video and audio along with additional features such as screen sharing, participant list and meeting lock. I have used Peer.js and socket.io for peer to peer connection through webRTC and client to server connection respectively.

GOALS

1. Implementing a working video chat feature as well as text chat feature.
2. Adding additional features such as participant list, screen sharing and meeting lock.

PLANNING

My plan for the 4 weeks was as follows:

1. For the first week my plan was to learn more about these technologies as I had little knowledge about web development and try to implement a simple two person video chat.
2. In the week prior, having learned more about this I extended the video chat and also added a simple chat option.
3. In the third week I added screen sharing, meet locking and participant list.
4. In the fourth week I tried to incorporate the surprise feature by adding the external chat and made improvements to the UI portion along with testing the features for possible bugs.

It was a great learning experience and I also got to interact with my mentor who gave me great guidance to help me out during the four weeks. Thanks to Microsoft for this great opportunity.

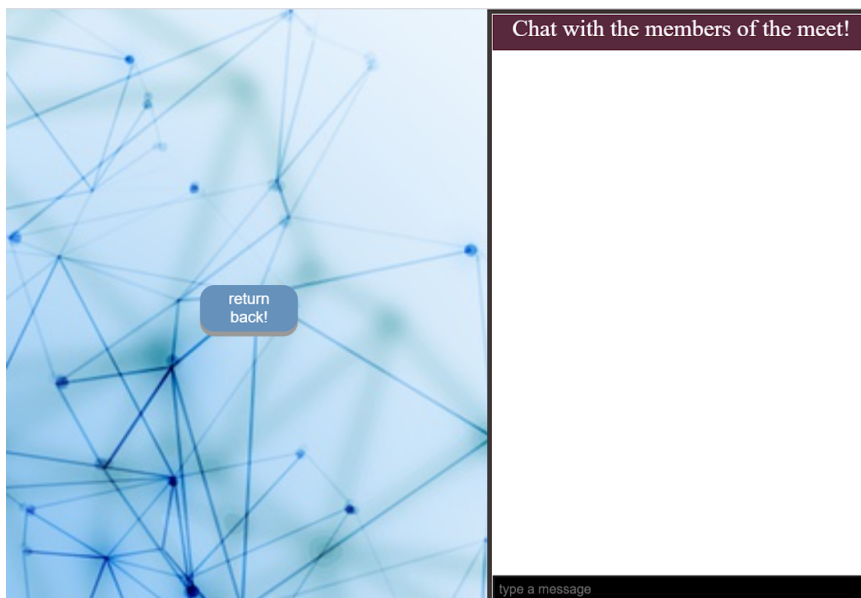
Main Page / Join Page



Main Page that appears on clicking the link to join the meet.

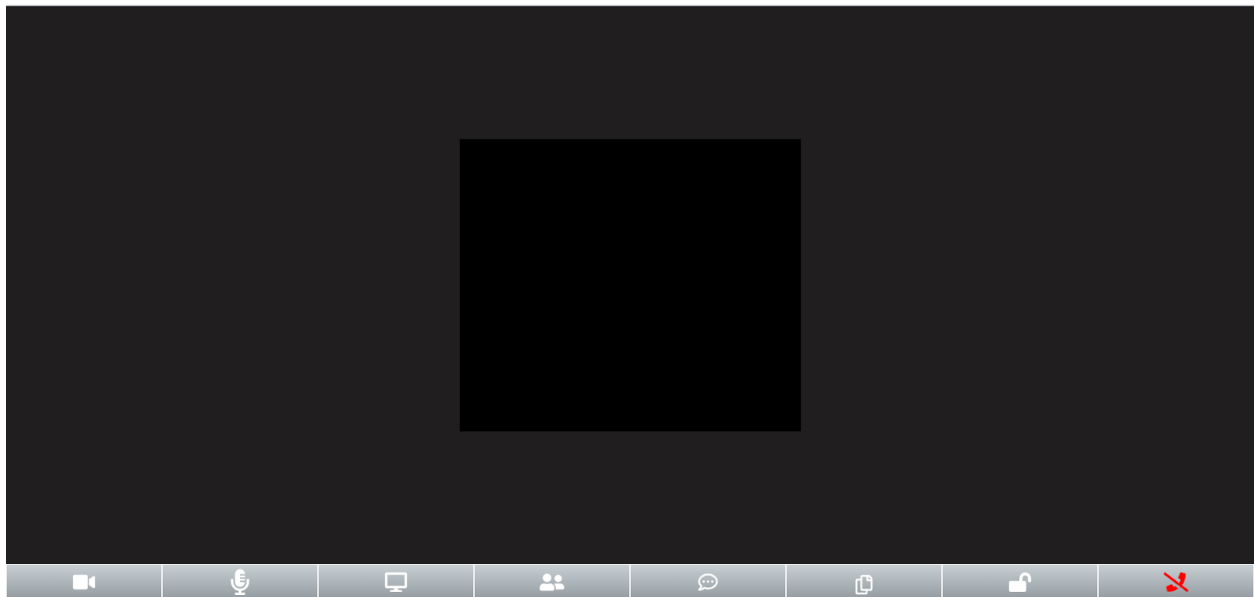
A User is expected to provide a username that'll remain valid until the tab is closed. One can't join without providing a valid username. Multiple participants in a meet can have the same username and are treated like separate individuals.

External Chat Option



Upon joining the external text chat a user can talk to any member in the meet as well as in the meeting at that point of time. A user joining the external chat doesn't send a chat notification to all the users about the following person joining. They also don't have other rights such as locking and unlocking the meeting.

Meet Portion

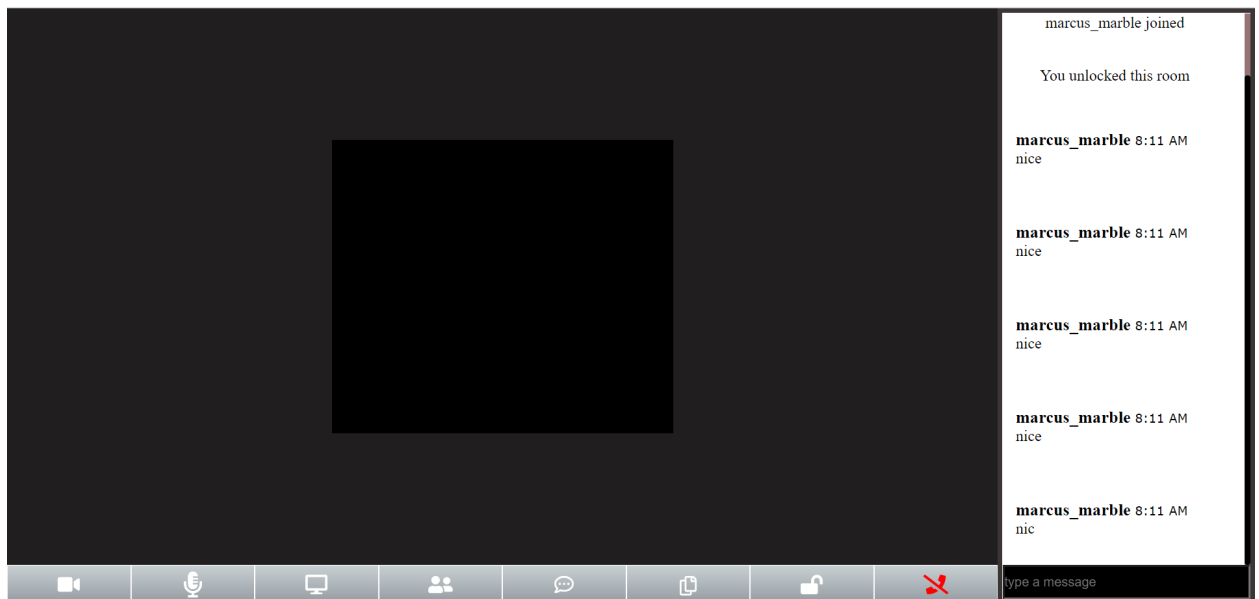


Upon joining the meet, one is greeted by the above page. In addition to the text chat feature in the external chat in which one can talk to all the participants of the meet and the external chat. The meet also adds the ability of video and audio chat along with some additional features such as video and audio on/off switches, participant list, screen sharing and meet locking feature.

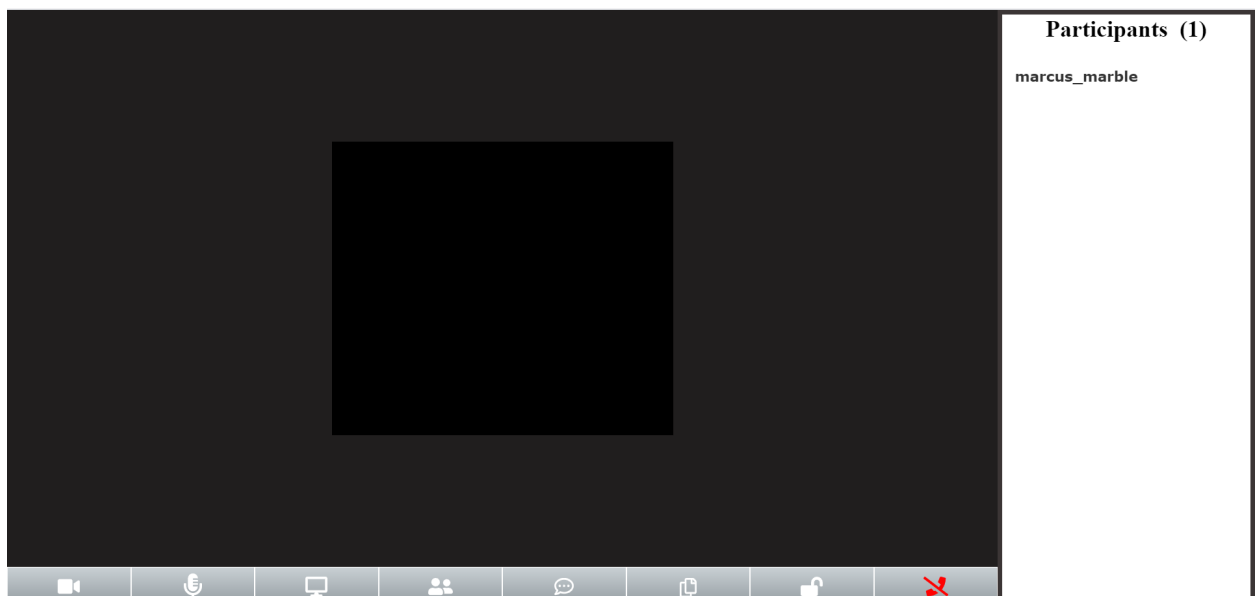
- The video and audio are off initially and one can click the button on the lower left part to switch video or audio on/off. The icon on the button turns red signifies that it's switched on and turns white signifying that it's switched off.
- The participant list can be toggled by clicking the 4th icon on the left. It maintains all the names of all the participants currently in the meet. It purposely doesn't save the names of the members in the external chat and updates on user joining as well as leaving.
- One can also toggle the chat where they can chat with the members of the team as described above.
- The copy link button allows the users to be able to copy the link to their clipboard and share with anyone to allow them to join the meet room.
- Third button to the left is the screen sharing button, one can click on it and share their screen to all the participants. Only one person is allowed to share their screen at a time to prevent any confusion among users as to what screen to follow.

- Then the meet locking button locks the meet and sends a chat notification to all the users that the meet was locked by that person. Anyone in the meeting can now easily unlock the meet. This feature is however not perfect and there are many improvements in it that can be made.
- Their buttons turn red when either camera, audio, screen sharing or meet lock are in active state.

In call chat



In call participant list



Leave meet page

Thanks for joining!!

[Redirect To Main Page](#)[Chat without joining the meet](#)

Once you leave the meeting you have the option to go back to the main page where you can join the meet again or chat without joining the meet, here you can talk to all the members of meet or external chat.

Room lock window

The meet is locked, contact the room members to unlock the meet!

[Main Page](#)

If the room is locked then opening the meet link or duplicating the meet tab will guide you to the following page. Here you are just directed to the main page of the app where you can create a new meet and share the link with others if you want to.

Invalid Request page

Accessing messages without a set username is prohibited!

In case someone tries to directly join “/room/message” without setting a username, they are directed to this page telling them that sending messages without a username is prohibited.

Possible Improvements

I would have liked to add a few other features and improvements that I wasn't able to this time around.

1. Saving the chat in a database so that one can refer to it even after closing and rejoining the meet.
2. A private chat option where you can text individual members of the meet.
3. General improvements to the UI.
4. Password protecting the meet so only the ones with their own unique password can join the meet.