Microsoft Teams Clone

Engage 2021

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# Summary

Developing a prototype of Microsoft Teams clone as a part of Microsoft Engagement & Mentorship Program – Engage 2021 using agile methodology. Agile development is a mindset whose values and principles provide guidance on how to create and respond to change and how to deal with uncertainty. To follow agile methodology our entire project was divided into sprints where each sprint’s goal was to build the most important features first and come out with a potentially deliverable product. More features were built into the product in subsequent sprints and are adjusted based on stakeholder and customer feedback between sprints.

# Objective

To develop Microsoft Teams Clone with mandatory feature of 1:1 video calling and some additional features including chat, mute option, video on/off option, leave meeting option using agile methodology.

# Success criteria

Fully functional prototype with at least **one mandatory functionality** - a minimum of two participants should be able connect with each other using your product to have a video conversation. Using Agile Methodology, we should be able to divide the work in sprints.

# Design

## Overview

This is a web-based application developed using HTML, CSS, NodeJS, peerJS documentation and socket.io.

Features includes

* Start a new meeting
  + New meeting button functionality
* Group video calling (more than 2 users)
  + User1 can create a room and can share the link/code to other users.
  + Share meeting link option
* Chatting
  + User1 can chat with the other participants while in the meeting and vice versa
* Mute/Unmute
  + Mut/Unmute button functionality
* Video on/off
  + Video on/off button functionality
* Leave meeting
  + Leave meeting button functionality

Packages and APIs

* For implementing the video calling feature
  + Used PeerJS to provide a complete, configurable, and easy-to-use peer-to-peer connection. Equipped with nothing but an ID, a peer can create a P2P data or media stream connection to a remote peer.
  + Used Socket.IO library to enable real-time, bidirectional and event-based communication between the browser and the server.
* Used various other packages for improving the UI of the application.

## Experience

When you go to the link of the web-based application it directs you to the home page which has a new meeting button. When the user clicks it, he/she is redirected to the video-chat page where the user is asked for the permission to use their microphone and camera. If user gives the access, the user is asked to enter his/her name. Now the user can click on the share meeting link button and share this link with the other people.

In this meeting, participants can chat with each other while on call, can mute/unmute themselves and switch their video on/off as per their requirements. There is also a leave meeting option for the participants to leave the meeting

## Testing

Deployed the application on Heroku and tested it for 1:1 video calls, chatting and group video calls over the internet.

# Timeline

4 weeks timeline is provided. Divided the work in 4 sprints and managed them using Azure DevOps.

<https://dev.azure.com/Niharika700/Microsoft%20Teams%20Clone>

# Appendix

Link to packages and APIs used

* [*https://socket.io/*](https://socket.io/)
* *https://peerjs.com/*