VIDEO CALLING

A Computer Networks Mini Project

TEAM MEMBERS

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INTRODUCTION

An application has to be designed for a video chatting which has 2 users. The users need to download the application which is accessible to internet users, once downloaded the users need to share their IPV4 address to each other and can start video calling. An application for the same was designed using by coding in Python. The requirements were emulated and tested for connectivity. Internally, department routers are interconnected for unfiltered access for the connection between server and client. The server & the client side needs to share their IPV4 address once the application is downloaded for the both sides. Sockets are used for video streaming, audio connectivity, mic connection and screen sharing. Pings were used to check the connectivity and the reachability of the systems from all the network.

IMPLEMENTATION

This application is implemented in day to day life for point to point conferencing. Key features of video calling Software Used: Video conferencing gives more additional embedded features to provide the maximum usability of the conference. Screen sharing: This feature allows users to share their screens and presents while being in the call. Users can simply go through an important document or support materials, presentation, videos to support their live presentation with other participants. This is much useful in team meetings as this helps to keep everyone on the same page with a clear understanding. Some of the video conferencing apps support allowing permission to access other's screens, so they can actively collaborate in presentations. Chatbox this feature can be used when you do not need to interrupt the speaker by talking in the middle of his session. Most of the tools now offer private and group chat boxes where you can share the messages, files, and images with your colleagues. Video call recording: This allows keeping a recording in important sessions which is useful in documenting or sharing the information with other people. This needs the permission of the other participants and they are being notified when someone is recording the session.Device switching: With this feature, you can switch the device you are using in the middle of a conference without getting hung up from the calls.

PROTOCOL USED

To make this application we have used TCP protocol that is **Transmission control protocol.**

The reasons for which we are using TCP are

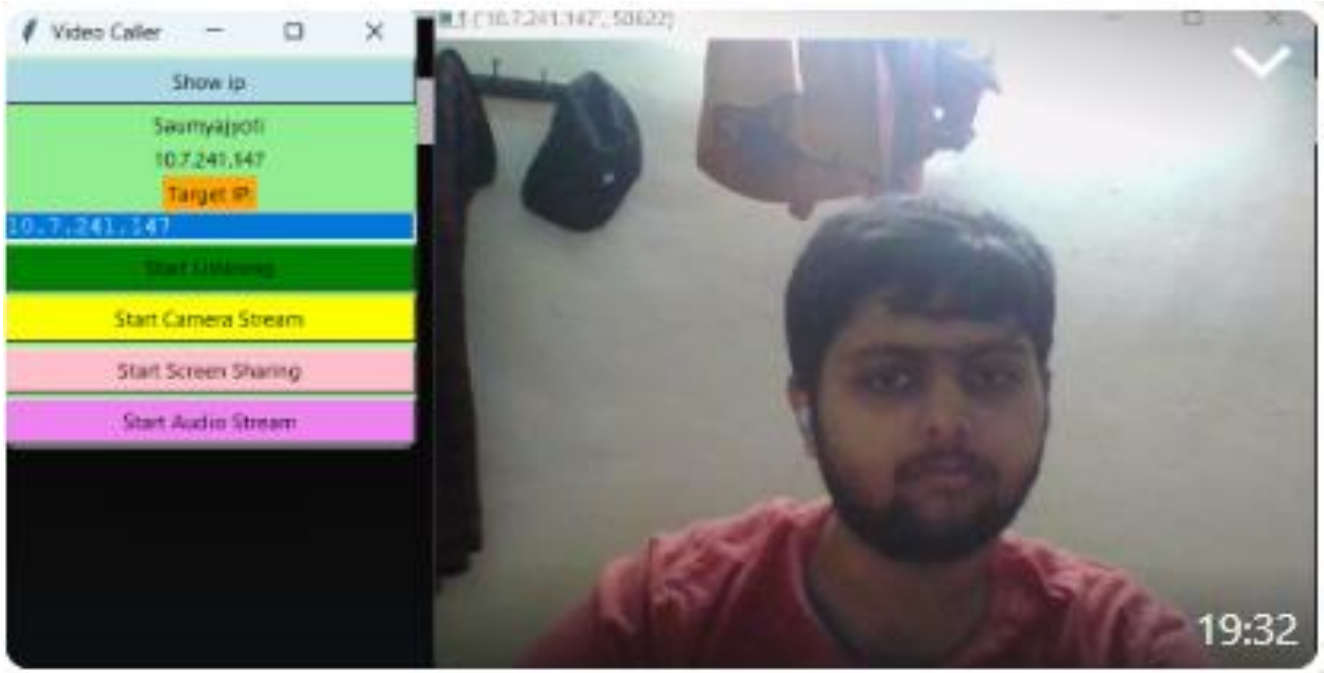
- It is an industry-standard model that can be effectively deployed in practical networking problems.
- It is interoperable, i.e., it allows cross-platform communications among heterogeneous networks.
- It is an open protocol suite. It is not owned by any particular institute and so can be used by any individual or organization.
- It is a scalable, client-server architecture. This allows networks to be added without disrupting the current services.
- It assigns an IP address to each computer on the network, thus making each device to be identifiable over the network. It assigns each site a domain name. It provides name and address resolution services.

FUTURE UPDATES

In this application users have to lock on target ip to connect to the other users. In future each user will get unique id which user have to share to begin video chatting in this it is a secure way of communication. In future we will even add conference mode more people can join at a time. The video quality will be improved. Following features will be added in near future

- Translate spoken English with Translated Captions.
- Improve meeting collaboration with Companion Mode.
- Move participants automatically from Breakout rooms.
- Lock participants' audio and video on iOS.
- Host 500 person meetings on select Workspace accounts.

RESULT



The left side pop us is the Application programming interface for the video calling application. When clicked on show IP it shows your user name and IPV4 address which needed to be shared on the client side and you need to put the clients IPV4 address. Once done press start listening and start camera stream for video calling. For mic press audio stream and screen sharing start screen sharing button. The left pop up will show the video of the client side while yours will be shows on the client side

CONCLUSION

This video calling application is very helpful in day to day life. Our application gives secure and seamless experience. Our will help various institutions in many ways:

- **Improves communication**
- **Helps build relationships**
- **Saves money**
- **Saves time**
- **Streamlines collaboration**
- **Improves efficiency**
- **Increases productivity**
- **Makes scheduling meetings easier**
- **Creates consistent, accurate records**
- **Enables live events**

At last we want to conclude our application is revolutionary and change the world

THANK YOU