Computer Networks

Submitted to Prof. Shashi Prabh

<u>Internet Multicasting Radio over IP</u>

Group 13
Shrey Patel AU1940110
Maulik Bhalani AU1940206
Keyur Nagar AU1940207
Jinil Chandarana AU1940121

1. C files of the project:

- server.c [gcc server.c -o server]:
    - -To send details of the station using TCP.
- client.c [gcc client.c -o client]:
    - - To receive station details from the server.
- station1.c / station2.c [./station[i] mc_addr]:
    - - will be executed by server itself according to the opted station.
- receiver.c [./recerver mc_addr]:
    - - will be executed by client itself according to the opted station.
    - - it will stream data send by the opted station.

2. Our Approach:

o   Initially, clients send the request to join the main server(e.g. radio). The server will provide the list of available radio stations through a TCP socket.

o   Clients will choose one of the radio stations and connect to multicast groups.

o   The client will start receiving the data from the station that he has selected. Stations will continuously send the data.

o When a client gets connected to a particular station, it will start receiving the data through UDP.

3. GUI:

We haven't been able to make a full-fledged interface for a user on a website or so, but we have tried to give options to the user in the terminal itself for choosing the radio that he wants to play. Below is the screenshot of the same. The user can enter the radio he wants to listen and the server will be connected to that radio station.


4. Design Configuration: (TCP and UDP use)

o TCP: It is used to provide all station lists and station info to the client through the TCP server.

o UDP: it is used to stream the video/audio to all the receivers who are on any particular base station like base station 1 or 2.

o This is used to achieve reliable transmission over the socket and stream the same.

o We haven't implemented any GUI, so all the operations can be performed through the terminal itself.

5. Final Output Screenshots:
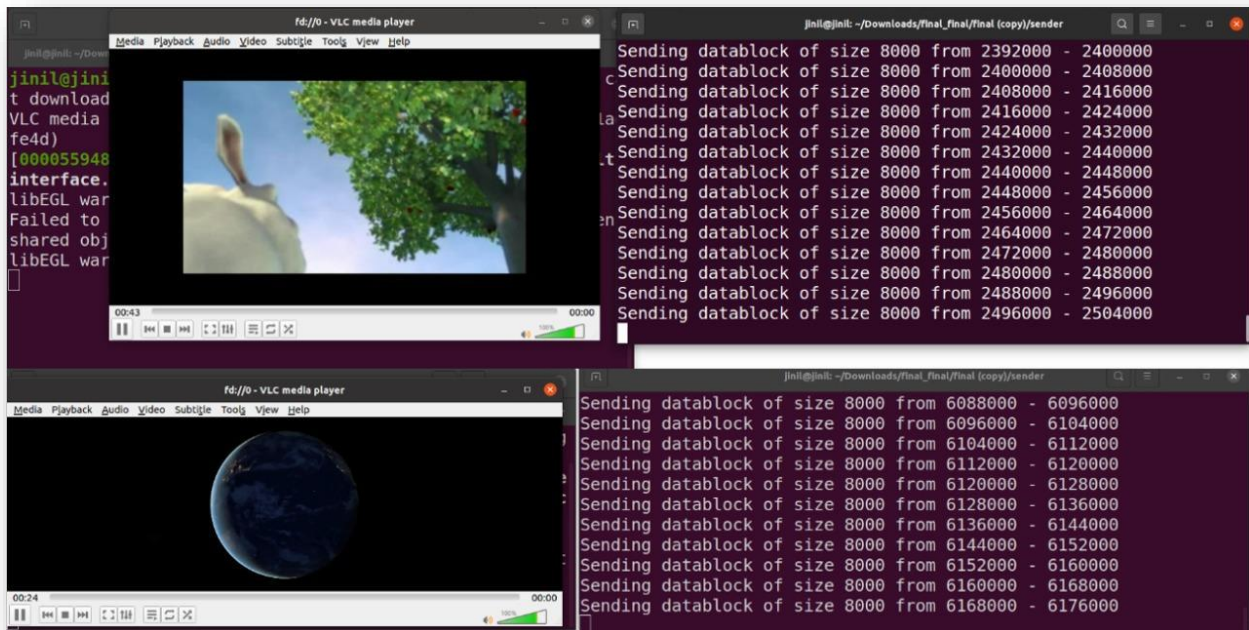
6. Contribution of Each team member:

Name of the team member	Role in the project
Shrey Patel	Server, Sender code, Code debugging and final report
Keyur Nagar	Server, Sender code, Code debugging and final report
Jinil Chandarana	Client, Receiver code, Code debugging and final report

Maulik Bhalani	Client, Receiver code,Code debugging and final report