

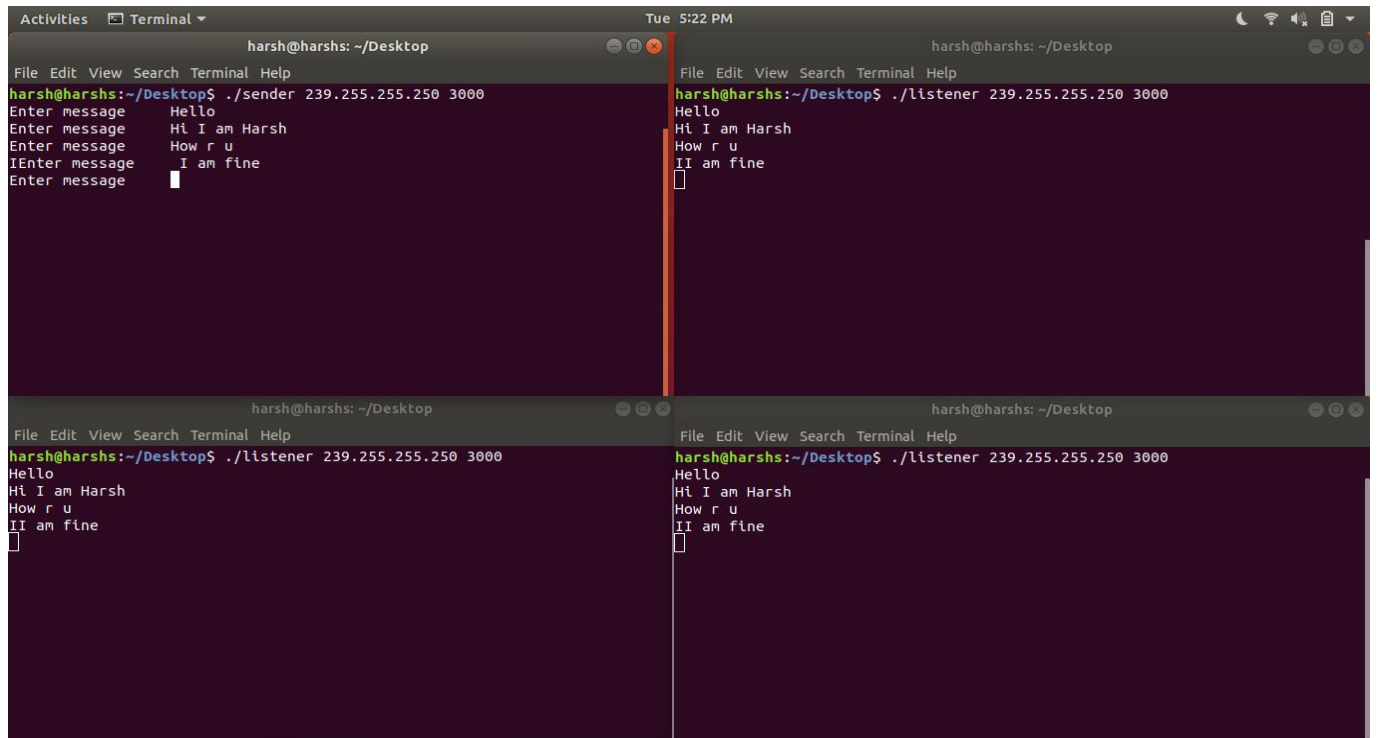
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## Lab7- Socket programming

### UDP Server-Client implementation with multiple listeners in C

Socket programming is a way of connecting two nodes on a network to communicate with each other. One socket(node) listens on a particular port at an IP, while another socket reaches out to the other to form a connection. The server forms the listener socket while the client reaches out to the server. TCP/IP provides end-to-end connectivity specifying how data should be formatted, addressed, transmitted, routed, and received at the destination can be used on the internet, and in stand-alone private networks, it is organized into layers.

In this practical, we learned about multicast IPs and their use in socket programming. Through this, we were able to register various listeners to a single host, who were able to listen to the message sent by the host simultaneously. For every message sent by the host, we prompt the user for input and the listeners were able to print the same message simultaneously.



The image shows four terminal windows arranged in a 2x2 grid, demonstrating a UDP communication application. The top-left window runs the sender program, which prompts for messages and sends them to 239.255.255.250:3000. The top-right window runs the listener program, which receives and displays the messages. The bottom-left window shows the listener program running without any messages. The bottom-right window shows the listener program running and displaying the same messages as the top-right window.

```
harsh@harshs: ~/Desktop
File Edit View Search Terminal Help
harsh@harshs:~/Desktop$ ./sender 239.255.255.250 3000
Enter message Hello
Enter message Hi I am Harsh
Enter message How r u
Enter message I am fine
Enter message
```

```
harsh@harshs: ~/Desktop
File Edit View Search Terminal Help
harsh@harshs:~/Desktop$ ./listener 239.255.255.250 3000
Hello
Hi I am Harsh
How r u
I am fine

```

```
harsh@harshs: ~/Desktop
File Edit View Search Terminal Help
harsh@harshs:~/Desktop$ ./listener 239.255.255.250 3000
Hello
Hi I am Harsh
How r u
I am fine

```

```
harsh@harshs: ~/Desktop
File Edit View Search Terminal Help
harsh@harshs:~/Desktop$ ./listener 239.255.255.250 3000
Hello
Hi I am Harsh
How r u
I am fine

```

## Conclusion

Through this practical application, we learned about UDP and implemented a basic listener and sender configuration like that of a whatsapp group.