

# Data Communication and Networks

## BSCS 21013

### Assignment 01

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#### ▪ Instructions

- To compile server

`gcc server.c -o server -lpthread`

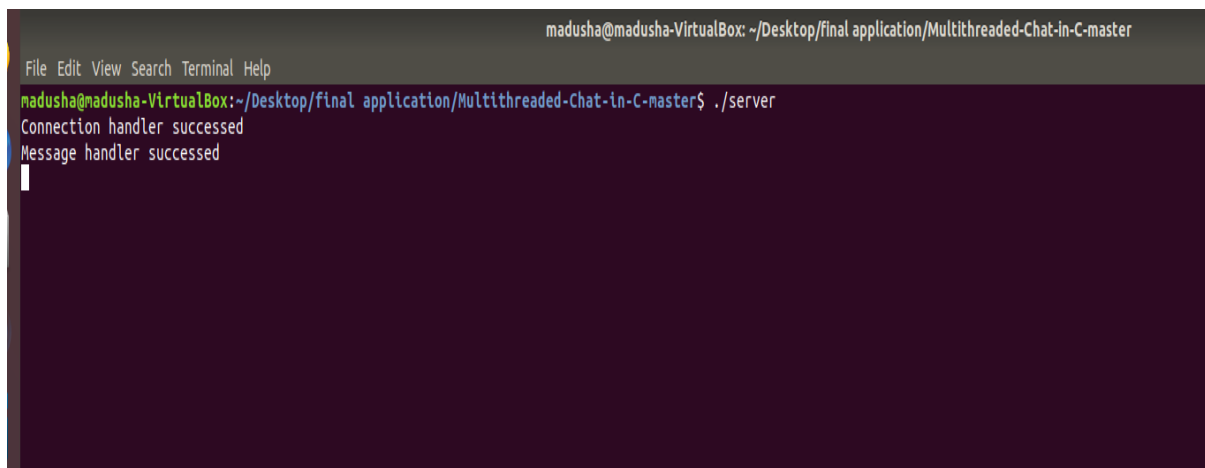
- To compile client

`gcc client.c -o client -lpthread`

- To run server

`./server`

- ✓ Server should be run first.
- ✓ If sever connection succeeded it will show below message.



The screenshot shows a terminal window with a dark background. The title bar at the top reads "madusha@madusha-VirtualBox: ~/Desktop/final application/Multithreaded-Chat-in-C-master". The terminal content shows the command `./server` being executed, followed by the output "Connection handler succeeded" and "Message handler succeeded".

```
madusha@madusha-VirtualBox: ~/Desktop/final application/Multithreaded-Chat-in-C-master
File Edit View Search Terminal Help
madusha@madusha-VirtualBox:~/Desktop/final application/Multithreaded-Chat-in-C-master$ ./server
Connection handler succeeded
Message handler succeeded
```

- To run client
  - ./client
  - ✓ If client connection succeeded application will ask user name and server IP and server port(use default server port as 9999) in order.
  - ✓ If logging information successfully accepted application will show chat box immediately. Otherwise it will show error message and exit from program.

```

madusha@madusha-VirtualBox: ~/Desktop/final application/Multithreaded-Chat-in-C-master
File Edit View Search Terminal Help
madusha@madusha-VirtualBox:~/Desktop/final application/Multithreaded-Chat-in-C-master$ gcc client.c -o client -lpthread
madusha@madusha-VirtualBox:~/Desktop/final application/Multithreaded-Chat-in-C-master$ ./client

-----WELCOME CHAT ZONE-----

*NOTE:- For Exit-/quite
LOGIN INFORMAYION
Enter user name:max

Enter the server IP:10.0.2.15

Enter the server port:9999

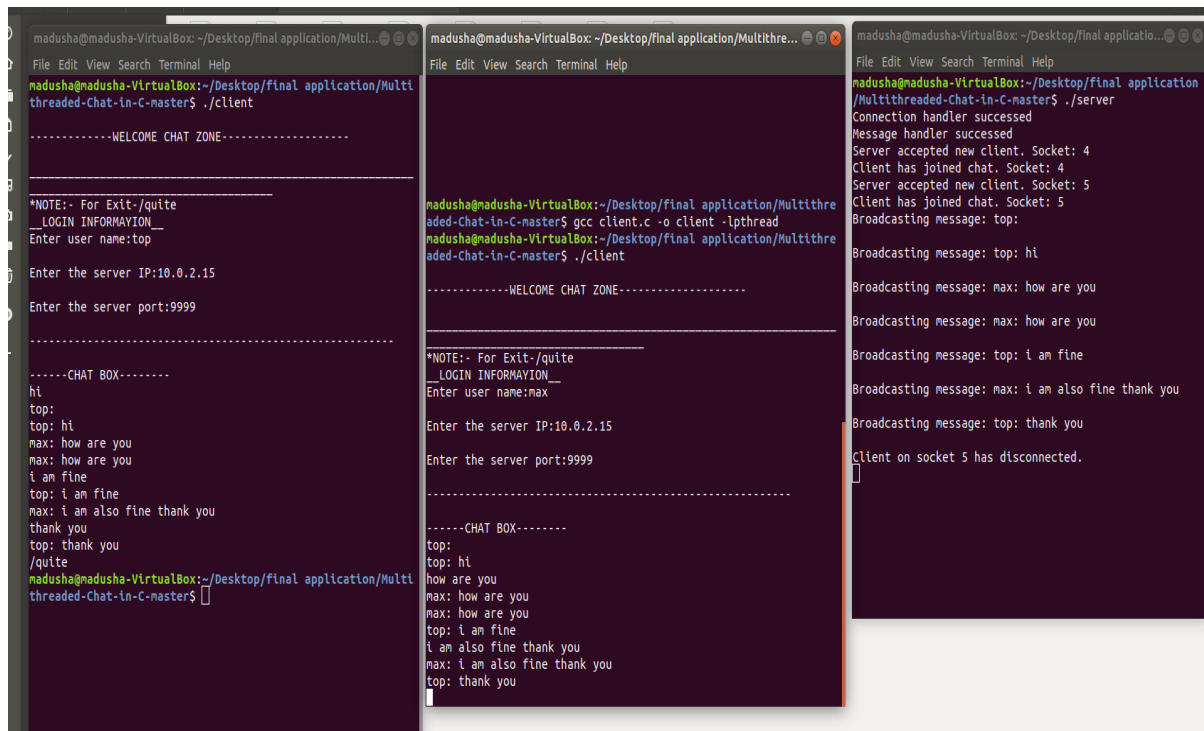
-----CHAT BOX-----

```

**Note:-** Clients can pass messages to each other and messages show in each clients' chat boxes and server message box. Clients identify by their username which provide by particular users. But server can not do any responses. Server connects clients only.

<pre> madusha@madusha-VirtualBox: ~/Desktop/final application/Multi... File Edit View Search Terminal Help madusha@madusha-VirtualBox:~/Desktop/final application/Multi... threaded-Chat-in-C-master\$ ./client  -----WELCOME CHAT ZONE-----  *NOTE:- For Exit-/quite LOGIN INFORMAYION Enter user name:top  Enter the server IP:10.0.2.15  Enter the server port:9999  -----CHAT BOX----- hi top: top: hi max: how are you max: how are you i an fine top: i an fine max: i an also fine thank you thank you top: thank you </pre>	<pre> madusha@madusha-VirtualBox: ~/Desktop/final application/Multithre... File Edit View Search Terminal Help  madusha@madusha-VirtualBox:~/Desktop/final application/Multithre... aded-Chat-in-C-master\$ gcc client.c -o client -lpthread madusha@madusha-VirtualBox:~/Desktop/final application/Multithre... aded-Chat-in-C-master\$ ./client  -----WELCOME CHAT ZONE-----  *NOTE:- For Exit-/quite LOGIN INFORMAYION Enter user name:max  Enter the server IP:10.0.2.15  Enter the server port:9999  -----CHAT BOX----- top: top: hi how are you max: how are you max: how are you top: i an fine i an also fine thank you max: i an also fine thank you top: thank you </pre>	<pre> madusha@madusha-VirtualBox: ~/Desktop/final applicatio... File Edit View Search Terminal Help madusha@madusha-VirtualBox:~/Desktop/final application /Multithreaded-Chat-in-C-master\$ ./server Connection handler succeeded Message handler succeeded Server accepted new client. Socket: 4 Client has joined chat. Socket: 4 Server accepted new client. Socket: 5 Client has joined chat. Socket: 5 Broadcasting message: top: Broadcasting message: top: hi Broadcasting message: max: how are you Broadcasting message: max: how are you Broadcasting message: top: i an fine Broadcasting message: max: i an also fine thank you Broadcasting message: top: thank you </pre>
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**Note:-** For exit from client's chat box type /quite then particular account disconnect from server and server shows disconnect socket number immediately.



```
madusha@madusha-VirtualBox: ~/Desktop/final application/Multi...
File Edit View Search Terminal Help
madusha@madusha-VirtualBox:~/Desktop/final application/Multi...
threaded-Chat-in-C-master$ ./client
-----WELCOME CHAT ZONE-----
-----CHAT BOX-----
*NOTE:- For Exit-/quite
LOGIN INFORMAYION
Enter user name:top
Enter the server IP:10.0.2.15
Enter the server port:9999
-----CHAT BOX-----
hi
top:
top: hi
max: how are you
max: how are you
i an fine
top: i an fine
max: i an also fine thank you
thank you
top: thank you
/quite
madusha@madusha-VirtualBox:~/Desktop/final application/Multi...
threaded-Chat-in-C-master$

madusha@madusha-VirtualBox: ~/Desktop/final application/Multithre...
File Edit View Search Terminal Help
madusha@madusha-VirtualBox:~/Desktop/final application/Multithre...
aded-Chat-in-C-master$ gcc client.c -o client -lpthread
madusha@madusha-VirtualBox:~/Desktop/final application/Multithre...
aded-Chat-in-C-master$ ./client
-----WELCOME CHAT ZONE-----
-----CHAT BOX-----
*NOTE:- For Exit-/quite
LOGIN INFORMAYION
Enter user name:max
Enter the server IP:10.0.2.15
Enter the server port:9999
-----CHAT BOX-----
top:
top: hi
how are you
max: how are you
max: how are you
top: i an fine
i an also fine thank you
max: i an also fine thank you
top: thank you

madusha@madusha-VirtualBox: ~/Desktop/final applicatio...
File Edit View Search Terminal Help
madusha@madusha-VirtualBox:~/Desktop/final applicatio...
/Multithreaded-Chat-in-C-master$ ./server
Connection handler successed
Message handler successed
Server accepted new client. Socket: 4
Client has joined chat. Socket: 4
Server accepted new client. Socket: 5
Client has joined chat. Socket: 5
Broadcasting message: top:
Broadcasting message: top: hi
Broadcasting message: max: how are you
Broadcasting message: max: how are you
Broadcasting message: top: i an fine
Broadcasting message: max: i an also fine thank you
Broadcasting message: top: thank you
Client on socket 5 has disconnected.
```