

# Computer Networks Lab 5

## Client-Server Communication

Arun Ganti

2019A7PS0021G

NOTE: While testing the code, if after running the server once, and you get “Cannot bind -1” error while running again, then wait for some time.

If you run `netstat --tcp --numeric | grep 4444` you will see that the socket on the port 4444 is in TIME\_WAIT state. Meaning that connection is closed, so it will be terminated in the timeout specified by the OS. After the timeout expires, the program executes without the error

b) Server is able to send the "Hello, what is your name?" message to the client

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: []
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: █
```

c) The client is able to send its name to the server and the server sends the response code.

## 200 OK

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: Arun Ganti

> Status sent to client : HTTP/1.1 200 OK

> Client's message: []
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: Arun Ganti

> Server response: HTTP/1.1 200 OK

> Send a message : []
```

## 500 ERROR

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: arun ganti

> Status sent to client : HTTP/1.1 500 ERROR

> Client's message: .
> Closing connection...

> Closing server...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ []
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: arun ganti

> Server response: HTTP/1.1 500 ERROR

> Server responded with 500 ERROR code
> Terminating connection...

> Closing client...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ []
```

c) If the client gets 200 OK from the server, then it sends the message, else it throws an error message and sends “.”

## 200 OK

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: Arun Ganti

> Status sent to client : HTTP/1.1 200 OK

> Client's message: Sending a message for d) part in lab
> Client's message: .

> Closing connection...

> Closing server...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: Arun Ganti

> Server response: HTTP/1.1 200 OK

> Send a message : Sending a message for d) part in lab
> Send a message : .

> Server response: Thank you Arun Ganti

> Closing client...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

## 500 ERROR

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: arun ganti

> Status sent to client : HTTP/1.1 500 ERROR

> Client's message: .
> Closing connection...

> Closing server...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: arun ganti

> Server response: HTTP/1.1 500 ERROR

> Server responded with 500 ERROR code
> Terminating connection...

> Closing client...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

e) The client can send continuous lines of messages to the server.

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
```

```
> New connection
```

```
> Hello message sent to client
```

```
> Name recieved from client: Arun Ganti
```

```
> Status sent to client : HTTP/1.1 200 OK
```

```
> Client's message: The quick brown fox jumped over the lazy dog 1234567890
```

```
> Client's message: :?;"'><!@#$$%^&*()
```

```
> Client's message: .c files need to be uploaded
```

```
> Client's message: notice the above started with ','
```

```
> Client's message: Closing connection now
```

```
> Client's message: .
```

```
> Closing connection...
```

```
> Closing server...
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
```

```
> Connected to server
```

```
> Server response: Hello, what is your name?
```

```
> Enter your name: Arun Ganti
```

```
> Server response: HTTP/1.1 200 OK
```

```
> Send a message : The quick brown fox jumped over the lazy dog 1234567890
```

```
> Send a message : :?;"'><!@#$$%^&*()
```

```
> Send a message : .c files need to be uploaded
```

```
> Send a message : notice the above started with ','
```

```
> Send a message : Closing connection now
```

```
> Send a message : .
```

```
> Server response: Thank you Arun Ganti
```

```
> Closing client...
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

f) The server sends a "Thank you, <name>"

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./server
> New connection
> Hello message sent to client
> Name recieved from client: Bob

> Status sent to client : HTTP/1.1 200 OK

> Client's message: Thank you for accepting the connection.
> Client's message: I have no messages for mail boxes in your server.
> Client's message: I am closing the connection now.
> Client's message: .

> Closing connection...

> Closing server...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```

```
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$ ./client
> Connected to server
> Server response: Hello, what is your name?
> Enter your name: Bob

> Server response: HTTP/1.1 200 OK

> Send a message : Thank you for accepting the connection.
> Send a message : I have no messages for mail boxes in your server.
> Send a message : I am closing the connection now.
> Send a message : .

> Server response: Thank you Bob

> Closing client...
samaritan@pop-os:~/Desktop/3-2/cn/labs/lab5$
```