



Computer Networks

Assignment 2

Client Server Socket Programming

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Instructions to run the code

First open the folder containing the client and server files and open the terminal in this folder.

The server file must be run before the client.

To run server1.py, type

python server1.py {server_ip} {server_port}

in the terminal. Same applies for any of the other server files.

Example: To run server1.py in localhost at port 3000.

```
python server1.py 127.0.0.1 3000
```

To run client.py, type

python client.py {server_ip} {server_port}

in the terminal.

Example: To run client.py in localhost at port 3000

```
python client.py 127.0.0.1 3000
```



Screenshots

1. server1.py

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server1.py 127.0.0.1 5000

[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 62383)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 62383) : 78-97
[MESSAGE SENT] --> Sending reply: -19
```

python
python
powershell

Client 1

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 78-97
Server replied: -19
Please enter the message to the server:
```

Client 2

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 87+98
```

Handling of another client after disconnection of a previous client in the same server

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server1.py 127.0.0.1 5000

[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 62383)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 62383) : 78-97
[MESSAGE SENT] --> Sending reply: -19
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 62383) :
[ERROR] --> unexpected EOF while parsing (<string>, line 0)
[CONNECTION ABORTED] --> Client ('127.0.0.1', 62383) has stopped the connection
Waiting for another client
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 62436)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 62436) : 87+98
[MESSAGE SENT] --> Sending reply: 185
```

Client

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000

[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 87+98
Server replied: 185
Please enter the message to the server: 
```

2.

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server2.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 59678)
Thread 0 Expression received from client ('127.0.0.1', 59678) : 7+5
Thread 0 Sending reply: 12
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 59686)
Thread 1 Expression received from client ('127.0.0.1', 59686) : 89-77
Thread 1 Sending reply: 12
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 59699)
Thread 2 Expression received from client ('127.0.0.1', 59699) : 9*7
Thread 2 Sending reply: 63
```

python
python
python
python

Client1

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 7+5
Server replied: 12
Please enter the message to the server:
```

python
python
python
python

Client2

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 89-77
Server replied: 12
Please enter the message to the server:
```

python
python
python
python

Client3

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 9*7
Server replied: 63
Please enter the message to the server: █
```

python
python
python
python

3.Handling single client

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server3.py 127.0.0.1 5000
[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 61524)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 61524) : 55+22
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 61524): 77
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 61536)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 61536) : 77-42
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 61536): 35
█
```

python
python
python

Client

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 55+22
Server replied: 77
Please enter the message to the server: █
```

python
python
python

Handling multiple clients

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server3.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 61524)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 61524) : 55+22
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 61524): 77
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 61536)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 61536) : 77-42
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 61536): 35
```

Client 1

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 55+22
Server replied: 77
Please enter the message to the server:
```

Client 2

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
```

```
[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 77-42
Server replied: 35
Please enter the message to the server:
```

4. Handling single client

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server4.py 127.0.0.1 5000
```

[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 60562)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60562) : 7+5
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): 7+5
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60562) : hu-90
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): hu-90
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 60582)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60582) : 889/45
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): 889/45
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60582) : hdfg89-9-98
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): hdfg89-9-98

Client

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000
```

[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 7+5
Server replied: 7+5
Please enter the message to the server: hu-90
Server replied: hu-90
Please enter the message to the server:

Handling multiple clients

Server

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python server4.py 127.0.0.1 5000

[SOCKET CREATED] --> Server socket is created
[SOCKET BINDED] --> Server socket binded to ('127.0.0.1', 5000)
[SERVER LISTENING] --> Server listening on ('127.0.0.1', 5000)
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 60562)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60562) : 7+5
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): 7+5
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60562) : hu-90
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): hu-90
[ACCEPTED CONNECTION] --> Server accepted connection from client ('127.0.0.1', 60582)
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60582) : 889/45
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): 889/45
[MESSAGE RECEIVED] --> Expression received from client ('127.0.0.1', 60582) : hdfg89-9-98
[MESSAGE SENT] --> Sending reply to client ('127.0.0.1', 5000): hdfg89-9-98
```

Client 1

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000

[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 7+5
Server replied: 7+5
Please enter the message to the server: hu-90
Server replied: hu-90
Please enter the message to the server: 
```

Client 2

```
PS C:\Users\Dweeja Reddy\Documents\BT20CSE032_CN_Assignment2> python client.py 127.0.0.1 5000

[SOCKET CREATED] --> Client socket is created
[ACCEPTED CONNECTION] --> Client connected to server ('127.0.0.1', 5000)
Please enter the message to the server: 889/45
Server replied: 889/45
Please enter the message to the server: hdfg89-9-98
Server replied: hdfg89-9-98
Please enter the message to the server: 
```