

## [CSS652 Networks Lab]

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### Lab 1

Q. Create a Server – Client connection.

>> client.py [multithreaded client requests]

```
1 import socket
2 import threading
3 import time
4
5 PORT = 3000
6 IP = '127.0.0.1'
7
8 def connect_to():
9     s = socket.socket()
10    s.connect((IP, PORT))
11    s.send(">> Client sends request.\n".encode())
12    print(s.recv(1024).decode())
13    s.close()
14
15 def main():
16     start = time.perf_counter()
17     clients = []
18     for i in range(5):
19         client = threading.Thread(target=connect_to)
20         client.start()
21         clients.append(client)
22     for thread in clients:
23         thread.join()
24     finish = time.perf_counter()
25     print(f'\n\nFinished in {round(finish-start, 2)} second(s)\n')
26
27 if __name__ == '__main__':
28     main()
```

>> server.py

```
1 import socket
2
3 PORT = 3000
4 IP = '127.0.0.1'
5
6 s = socket.socket()
7 s.bind((IP, PORT))
8 print("Socket created and bound to PORT: %s" %(PORT))
9 s.listen(5)
10
11 while True:
12     c, address = s.accept()
13     print('[!] Connection request from:', address)
14     print(c.recv(1024).decode())
15     c.send('>> Server sends acknowledgement.\n'.encode())
16     c.close()
```

>> Runtime [Server Logs]

```
JasperCyan@LAPTOP-UTQJNQCA MINGW64 /d/Classes/6. Sixth Semester/Networks Lab
$ python Lab\ 1\ -\ Introduction/server.py
Socket created and bound to PORT: 3000
[!] Connection request from: ('127.0.0.1', 23480)
>> Client sends request.

[!] Connection request from: ('127.0.0.1', 23479)
>> Client sends request.

[!] Connection request from: ('127.0.0.1', 23481)
>> Client sends request.

[!] Connection request from: ('127.0.0.1', 23482)
>> Client sends request.

[!] Connection request from: ('127.0.0.1', 23483)
>> Client sends request.
```

>> Client Side

```
JasperCyan@LAPTOP-UTQJNQCA MINGW64 /d/Classes/6. Sixth Semester/Networks Lab
$ python Lab\ 1\ -\ Introduction/client.py
>> Server sends acknowledgement.

>> Server sends acknowledgement.

>> Server sends acknowledgement.

>> Server sends acknowledgement.
```

Finished in 0.0 second(s)