18CSC207J-Advance Programming Practice - Structured Programming – Lab Programs

Week 7 - Network Programming Paradigm

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Class :-CSE F1

Q2. Write a Socket-based Python server program that responds to client messages as follows: When it receives a message from a client, it simply converts the message into all uppercase letters and sends back the same to the client. Write both client and server programs demonstrating this.
Solution.

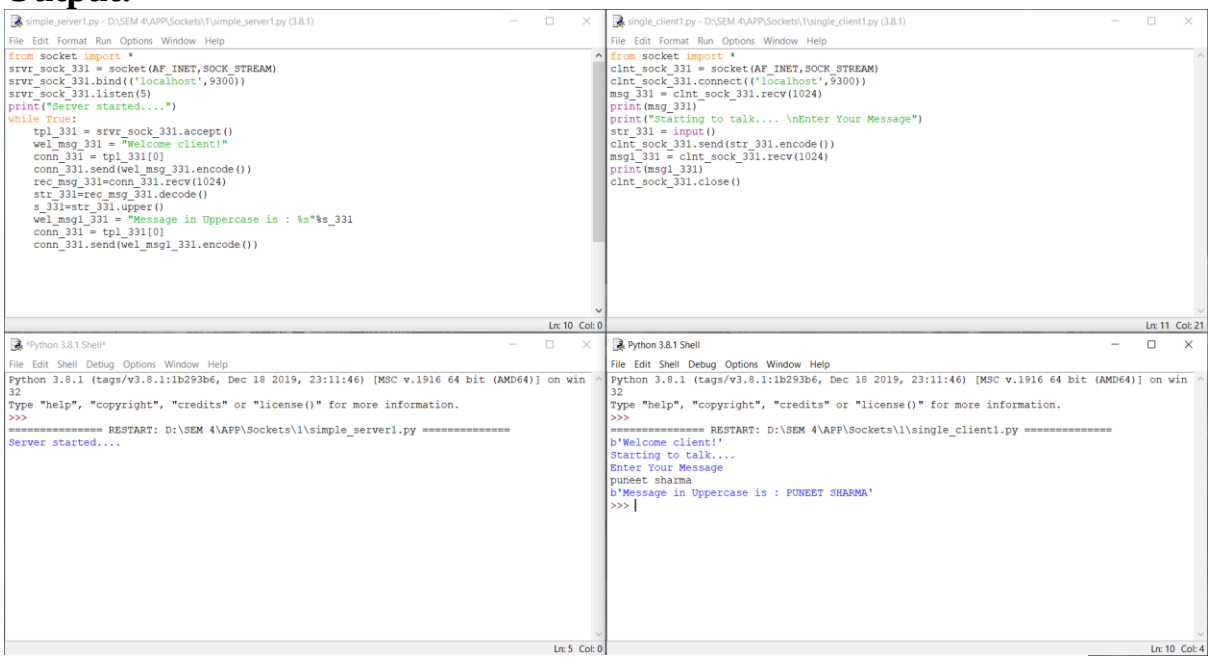
Server Code:

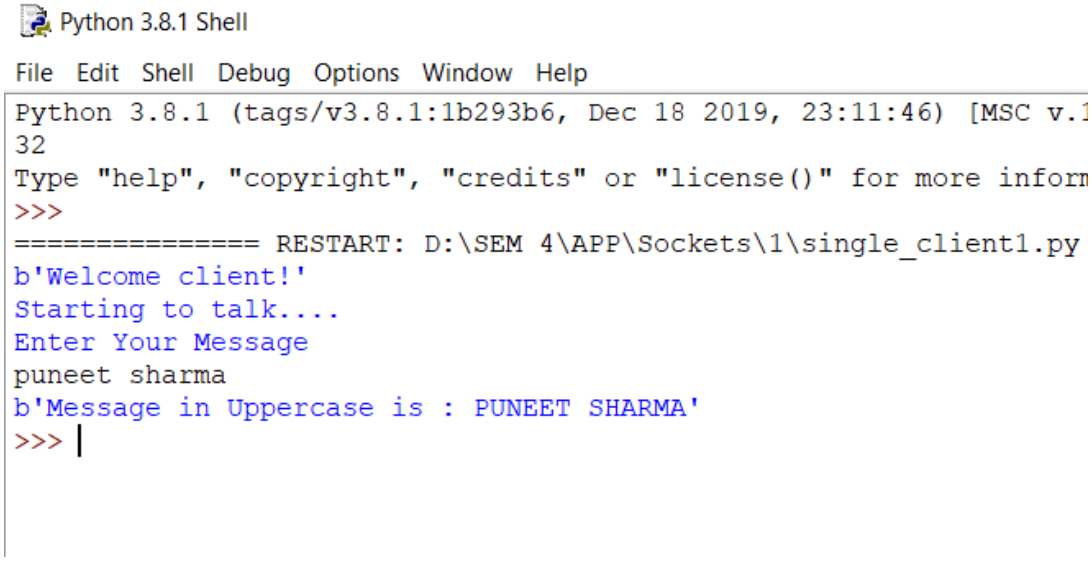
```
from socket import *
srvr_sock_331 = socket(AF_INET,SOCK_STREAM)
srvr_sock_331.bind(('localhost',9300))
srvr_sock_331.listen(5)
print("Server started....")
while True:
    tpl_331 = srvr_sock_331.accept()
    wel_msg_331 = "Welcome client %s"%tpl_331[1][0]
    conn_331 = tpl_331[0]
    conn_331.send(wel_msg_331.encode())
    rec_msg_331=conn_331.recv(1024)
    str_331=rec_msg_331.decode()
    s_331=str_331.upper()
    wel_msg1_331 = "Message in Uppercase is : %s"%s_331
    conn_331 = tpl_331[0]
    conn_331.send(wel_msg1_331.encode())
```

Client Code:

```
from socket import *
clnt_sock_331 = socket(AF_INET,SOCK_STREAM)
clnt_sock_331.connect(('localhost',9300))
msg_331 = clnt_sock_331.recv(1024)
print(msg_331)
print(type(msg_331))
print("Starting to talk.... \nEnter Your Message")
str_331 = input()
clnt_sock_331.send(str_331.encode())
msg1_331 = clnt_sock_331.recv(1024)
print(msg1_331)
clnt_sock_331.close()
```

Output:





3. Write a ping-pong client and server application. When a client sends a ping message to the server, the server will respond with a pong message. Other messages sent by the client can be safely dropped by the server.
Solution:

Server Code:

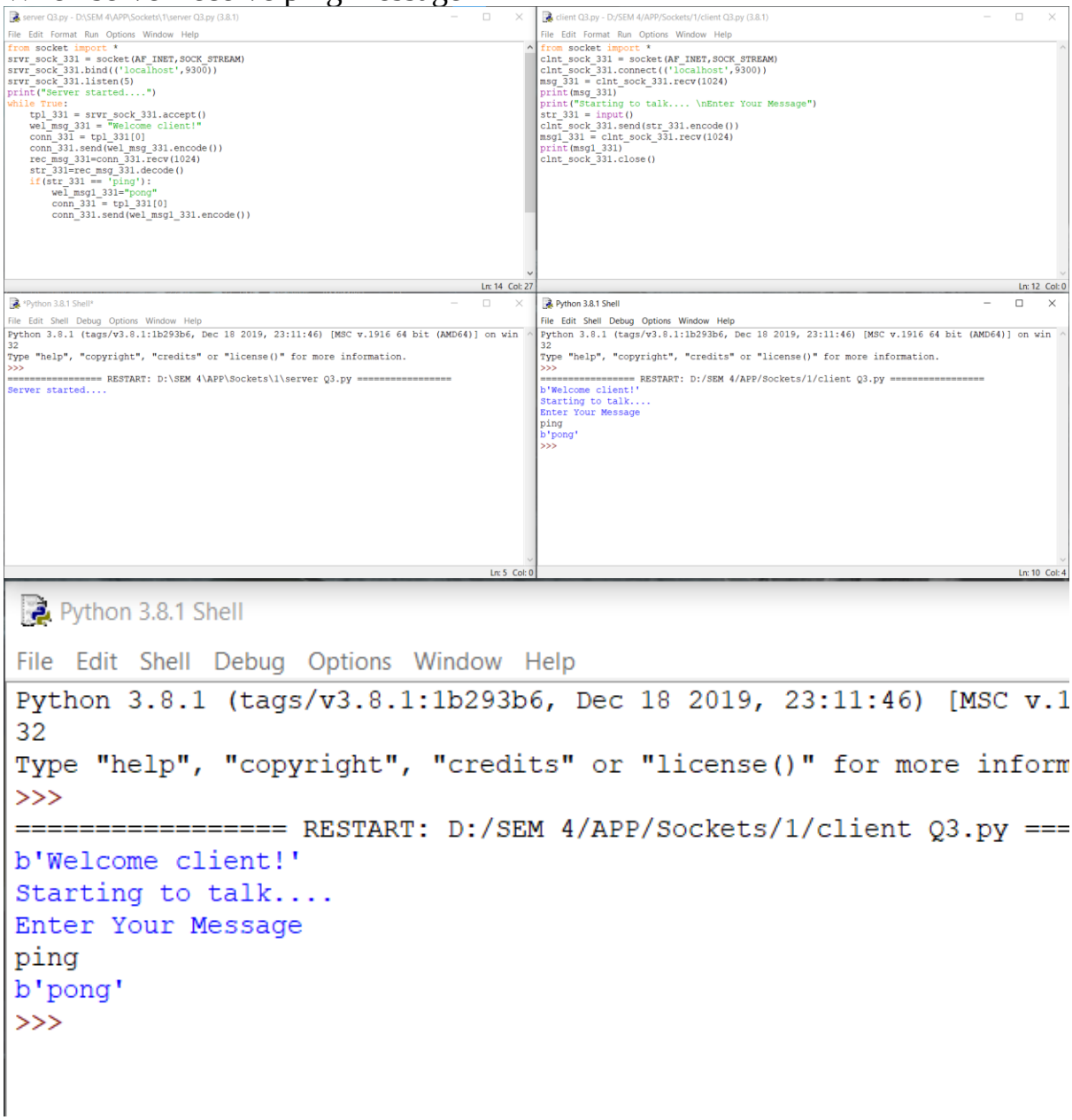
```
from socket import *
srvr_sock_331 = socket(AF_INET,SOCK_STREAM)
srvr_sock_331.bind(('localhost',9300))
srvr_sock_331.listen(5)
print("Server started....")
while True:
    tpl_331 = srvr_sock_331.accept()
    wel_msg_331 = "Welcome client!"
    conn_331 = tpl_331[0]
    conn_331.send(wel_msg_331.encode())
    rec_msg_331=conn_331.recv(1024)
    str_331=rec_msg_331.decode()
    if(str_331 == 'ping'):
        wel_msg1_331="pong"
        conn_331 = tpl_331[0]
        conn_331.send(wel_msg1_331.encode())
```

Client Code:

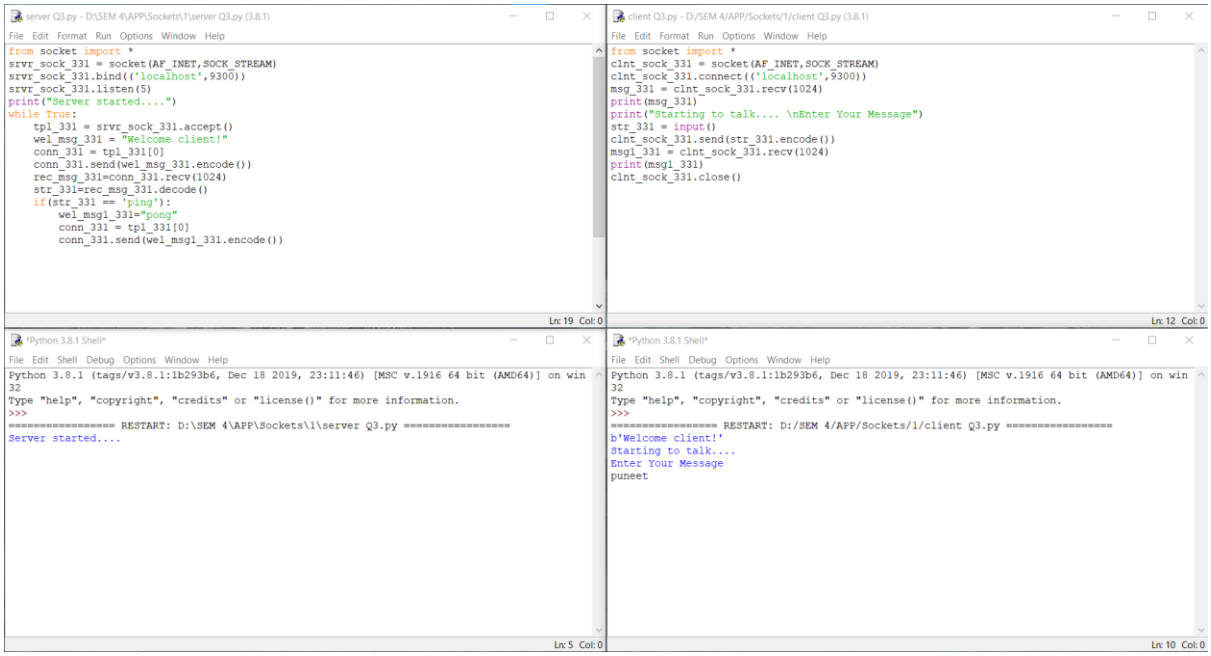
```
from socket import *
clnt_sock_331 = socket(AF_INET,SOCK_STREAM)
clnt_sock_331.connect(('localhost',9300))
msg_331 = clnt_sock_331.recv(1024)
print(msg_331)
print("Starting to talk.... \nEnter Your Message")
str_331 = input()
clnt_sock_331.send(str_331.encode())
msg1_331 = clnt_sock_331.recv(1024)
print(msg1_331)
clnt_sock_331.close()
```

Output:

When server receive ping message



When Server does not receive ping message



server Q3.py - D:\SEM 4\APP\Sockets\1\server Q3.py (3.8.1)

File Edit Format Run Options Window Help

```
from socket import *
srvr_sock_331 = socket(AF_INET,SOCK_STREAM)
srvr_sock_331.bind(('localhost',9300))
srvr_sock_331.listen(5)
print("Server started....")
while True:
    tpl_331 = srvr_sock_331.accept()
    wel_msg_331 = "Welcome client!"
    conn_331 = tpl_331[0]
    conn_331.send(wel_msg_331.encode())
    rec_msg_331=conn_331.recv(1024)
    str_331=rec_msg_331.decode()
    if(str_331 == 'ping'):
        wel_msg1_331="pong"
        conn_331 = tpl_331[0]
        conn_331.send(wel_msg1_331.encode())
```

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client Q3.py - D:/SEM 4/APP/Sockets/1/client Q3.py (3.8.1)

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```
from socket import *
clnt_sock_331 = socket(AF_INET,SOCK_STREAM)
clnt_sock_331.connect(('localhost',9300))
msg_331 = clnt_sock_331.recv(1024)
print(msg_331)
print("Starting to talk.... \nEnter Your Message")
str_331 = input()
clnt_sock_331.send(str_331.encode())
msg1_331 = clnt_sock_331.recv(1024)
print(msg1_331)
clnt_sock_331.close()
```

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Python 3.8.1 Shell

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```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 23:11:46) [MSC v.1916 64 bit (AMD64)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:\SEM 4\APP\Sockets\1\server Q3.py ==========
Server started....
```

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Python 3.8.1 Shell

File Edit Shell Debug Options Window Help

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 23:11:46) [MSC v.1916 64 bit (AMD64)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/SEM 4/APP/Sockets/1/client Q3.py ==========
b'Welcome client!'
Starting to talk....
Enter Your Message
puneet
```

Ln: 10 Col: 0