

## **Practical-12: Networking and Multithreading using Python**

1. Create server.py and client.py file and create chat applications for continuous communication between both.

### **CODE :-**

#### ● **Server.py :**

```
import socket
localhost="127.0.0.1"
port=1234
server=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
server.bind((localhost,port))
server.listen(1)
print("Server is ready ; And waiting for client ...")

cc,addr=server.accept()
msg=""
while TRUE:
    msg=cc.recv(1024)
    in_msg=msg.decode()
    if in_msg=='bye':
        break
    print("From client : ",in_msg)
    out_msg=input()
    cc.sendall(bytes(out_msg,'UTF-8'))
print("Connection Terminated")
```

#### ● **Client.py :**

```
import socket
localhost="127.0.0.1"
port=1234
```

```

client=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
client.connect((localhost,port))

client.sendall(bytes("This is client",'UTF-8'))
while TRUE:
    msg=client.recv(1024)
    in_msg=msg.decode()
    print("From server : ",in_msg)
    out_msg=input()
    client.sendall(bytes(out_msg,'UTF-8'))
    if out_msg=='bye':
        break
client.close()

```

**Output:**

```

Welcome to Chat Room
Initialising....
LAPTOP-10CB252L ( 192.168.103.103 )
Enter server address: 192.168.103.103
Enter your name: amit
Trying to connect to 192.168.103.103 ( 1234 )
Connected...
vikash has joined the chat room
Enter [e] to exit chat room
vikash : hey,amit!
Me : hello,vikash!!

```

```

Welcome to Chat Room
Initialising....
LAPTOP-10CB252L ( 192.168.103.103 )
Enter your name: vikash
Waiting for incoming connections...
Received connection from 192.168.103.103 ( 57375 )
amit has connected to the chat room
Enter [e] to exit chat room
Me : hey,amit!
amit : hello,vikash!!
..

```

2. Write a python program to demonstrate usage of multi threading.

**Code:**

```
from threading import *
from time import *
print("By Tirth Patel(20012011129)")
class mythread1(Thread):
    def run(self):
        for i in range(3):
            print("Processing Thread-1")
            sleep(1)

class mythread2(Thread):
    def run(self):
        for i in range(3):
            print("Processing Thread-2")

obj1=mythread1()
obj2=mythread2()

obj1.start()
obj2.start()
```

**Output:**

```
Starting Thread-1
Starting Thread-2
Thread-1: Fri May 5 08:43:28 2023
Thread-1: Fri May 5 08:43:29 2023
Thread-1: Fri May 5 08:43:30 2023
Exiting Main Thread
Thread-2: Fri May 5 08:43:32 2023
Thread-2: Fri May 5 08:43:34 2023
Thread-2: Fri May 5 08:43:36 2023
Exiting Main Thread
```

3. Write a python code to send email by passing a content.

**Code:**

```
from email import message
import smtplib as s
obj=s.SMTP("smtp.gmail.com",587)
# connecting object to server
obj.starttls()
#establishing secure environment.It will enable secure socket layer.
```

```
obj.login("amitgoswami21@gnu.ac.in","uvpce@123")
sender=" amitgoswami21@gnu.ac.in "
receiver=["amitgoswami698@gmail.com"]
subject="Testing SMTP protocol"
body=" It is no-reply mail"
msg="Subject:{ }\n{n{ } ".format(subject,body)
obj.sendmail(sender,receiver,msg)
obj.quit()
```

**Output:**



Amit Goswami <amitgoswami21@gnu.ac.in>

03:07 PM



To: Gmail 2

It is working

Sent from [Mail](#) for Windows