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Registration No: 18BCE2527

Network and Communication Lab (CSE-1004)

Faculty: Dr. Asis Kumar Tripathy.

Digital Assignment-02

Question 1:

Q1. Write TCP Socket program to transfer the contents of a file from the client program by reading from an existing file and write the contents to a new file in the server program.

Code:

Server Code:

```
import socket
port = 60005
s = socket.socket()
host = socket.gethostname()
s.bind((host, port))
s.listen(5)
print ('Server listening....')
while True:
    conn, addr = s.accept()
    print ('Got connection from', conn,addr)
    data = conn.recv(1024)
    print('Server received', repr(data))
    filename='mytext.txt'
    f = open(filename,'rb')
    l = f.read(1024)
    while (l):
        conn.send(l)
        print('Sent ',repr(l))
        l = f.read(1024)
    f.close()
    print('Done sending')
    conn.send('Thank you for connecting'.encode())
    conn.close()
```

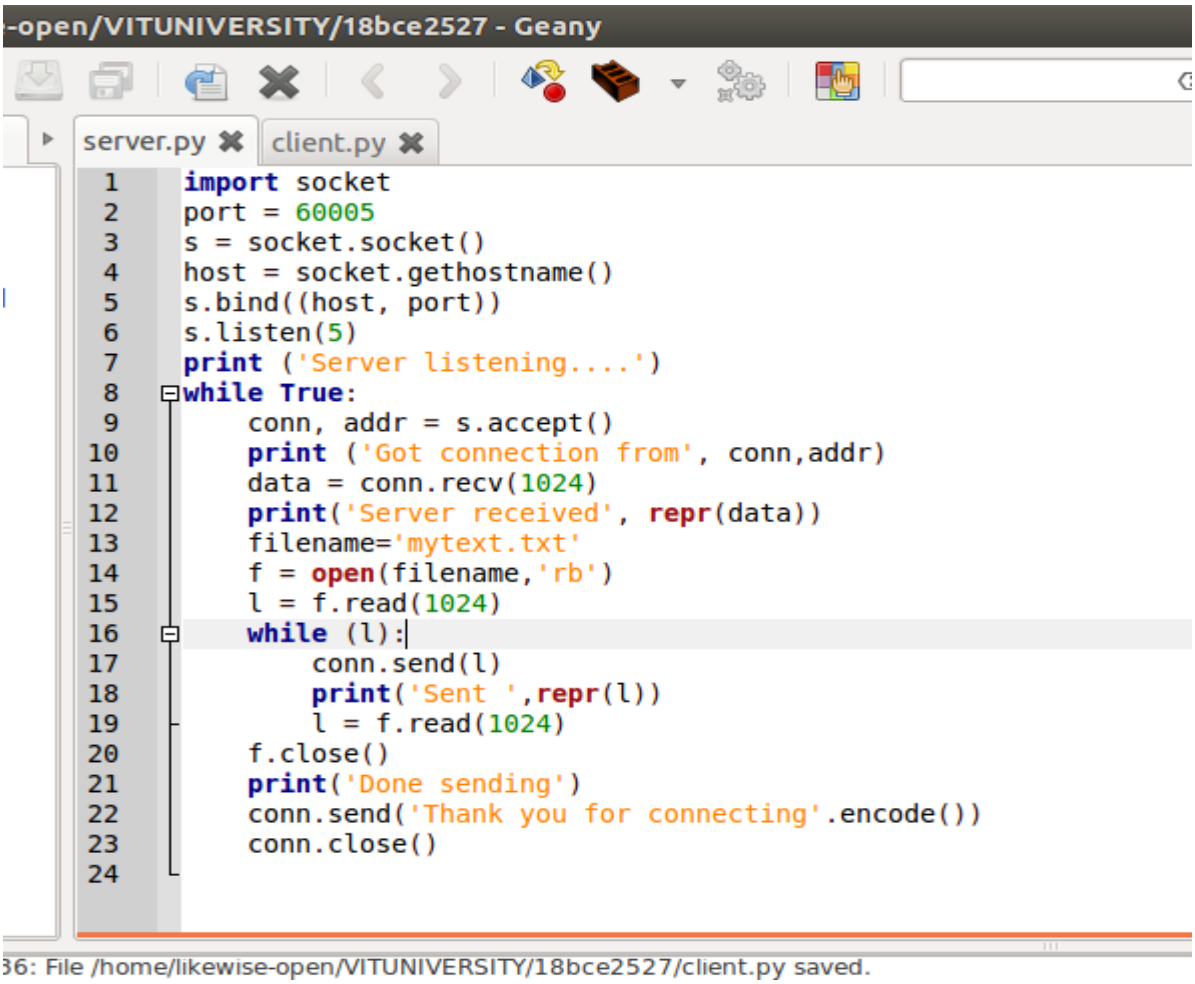
Client code:

```
import socket
s = socket.socket()
host = socket.gethostname()
port = 60005
s.connect((host, port))
s.send("Hello server!")
```

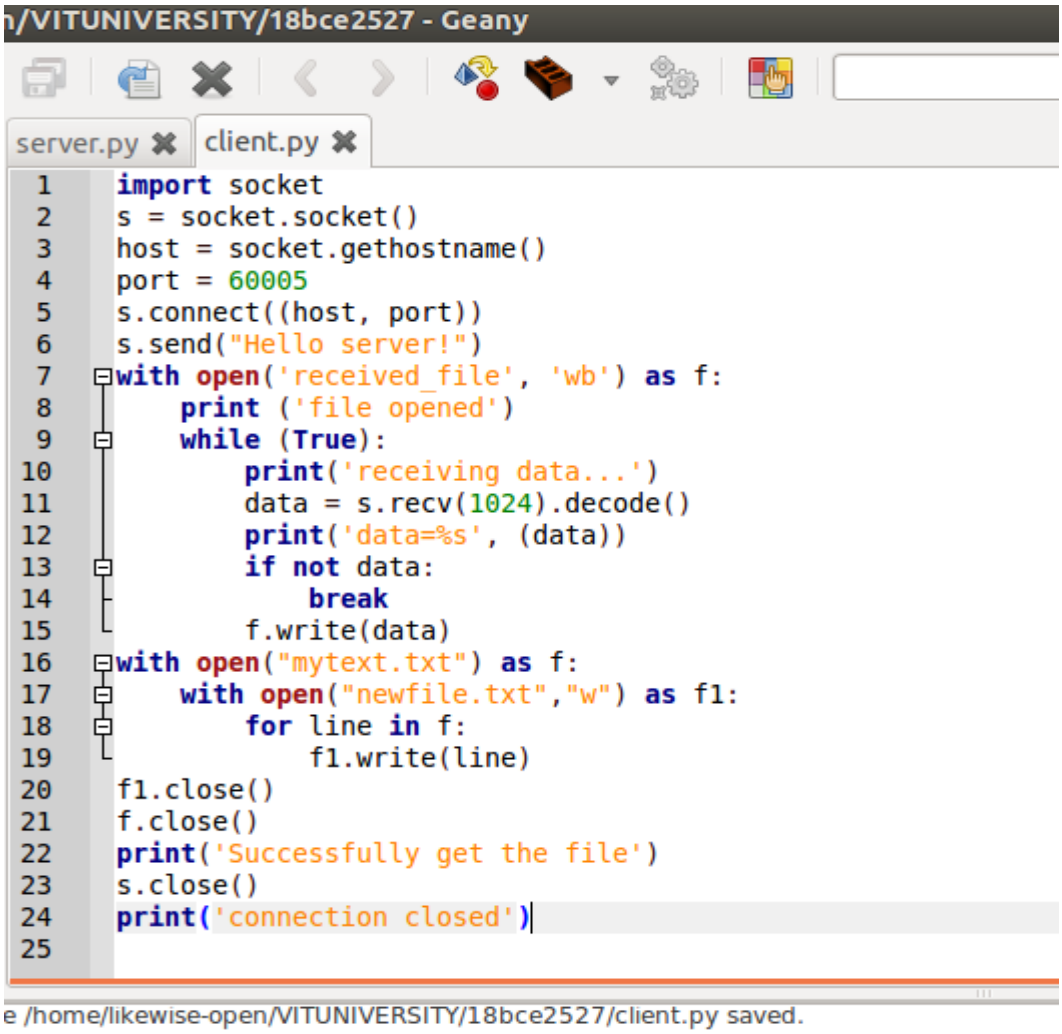
```
with open('received_file', 'wb') as f:
        print ('file opened')
        while (True):
                print('receiving data...')
                data = s.recv(1024).decode()
                print('data=%s', (data))
                if not data:
                        break
                f.write(data)
with open("mytext.txt") as f:
        with open("newfile.txt","w") as f1:
                for line in f:
                        f1.write(line)
f1.close()
f.close()
print('Successfully get the file')
s.close()
print('connection closed')
```

Snapshots of typed code:

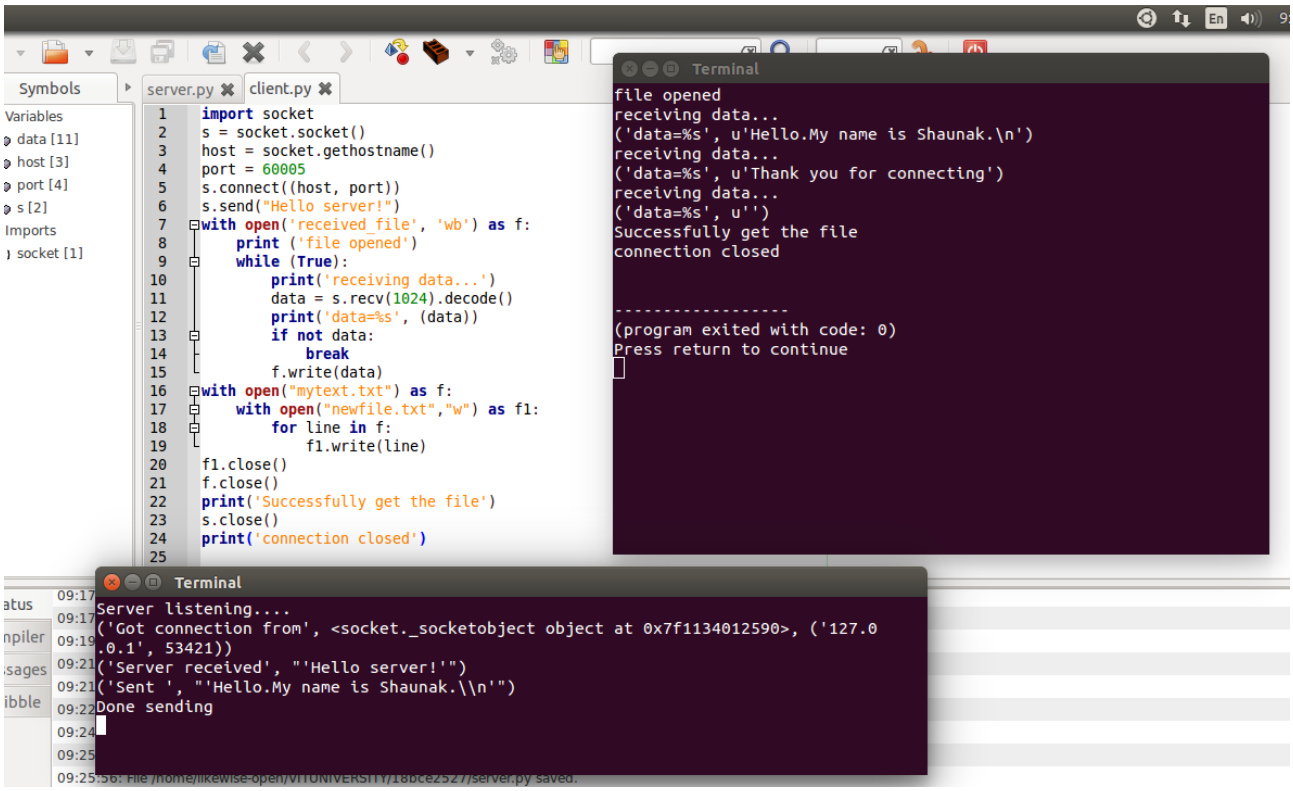
Server:



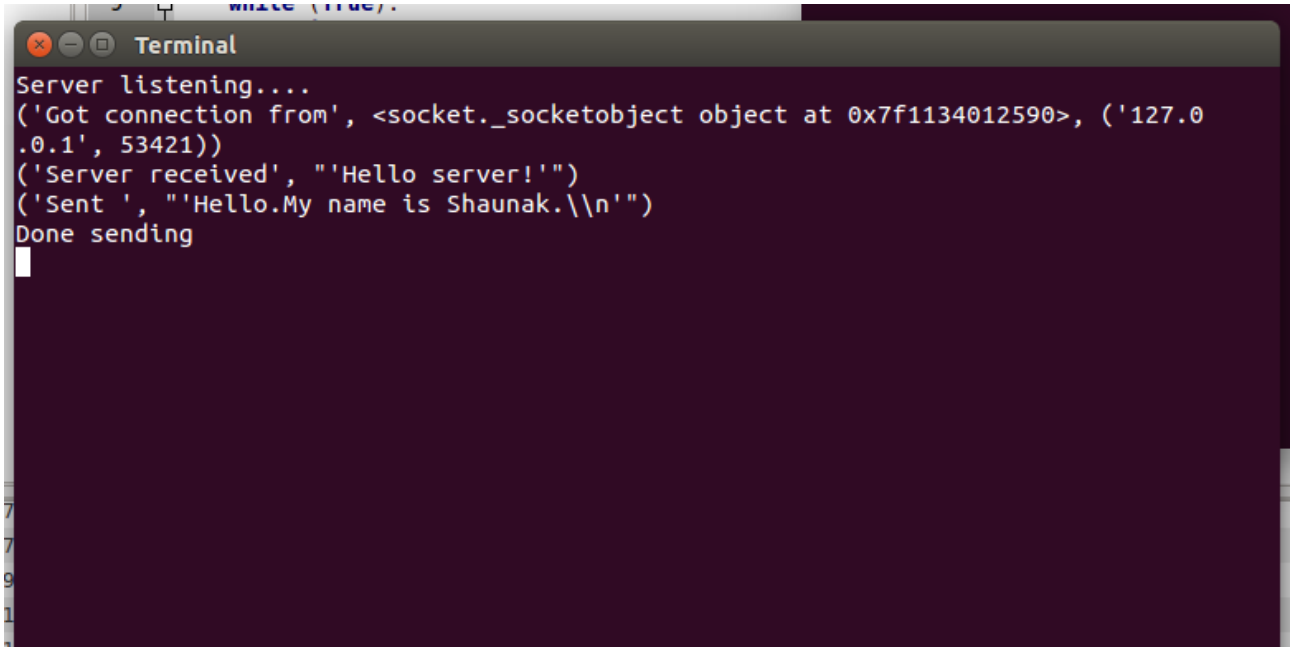
Client:



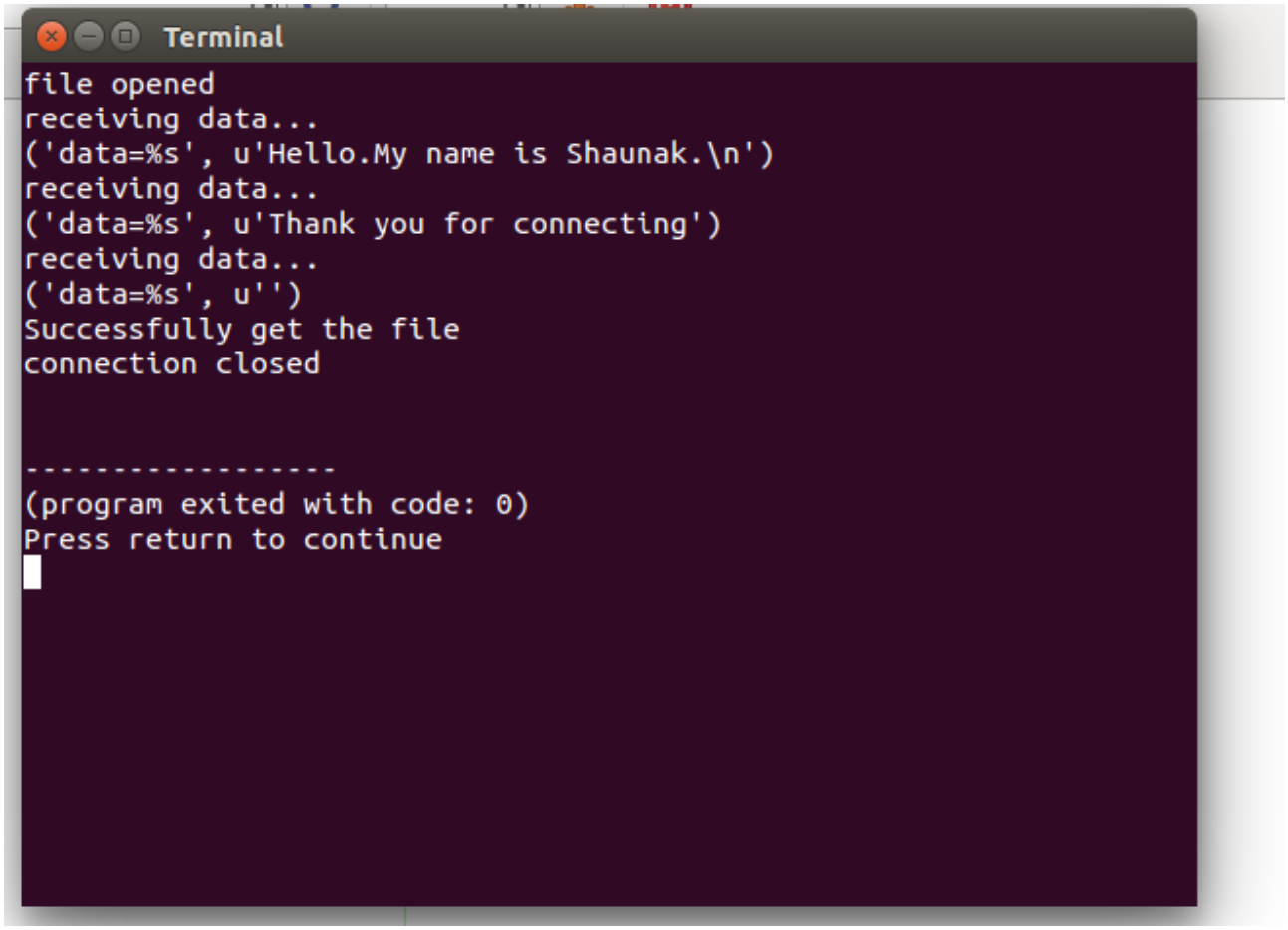
OUPUT:



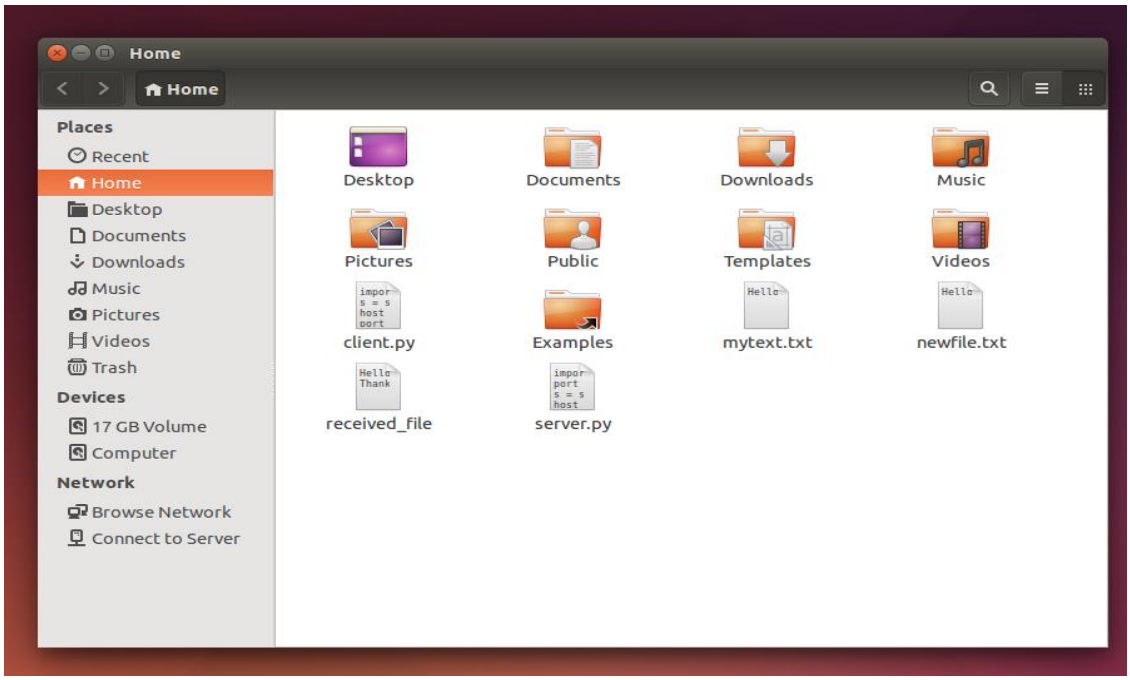
Server Output:

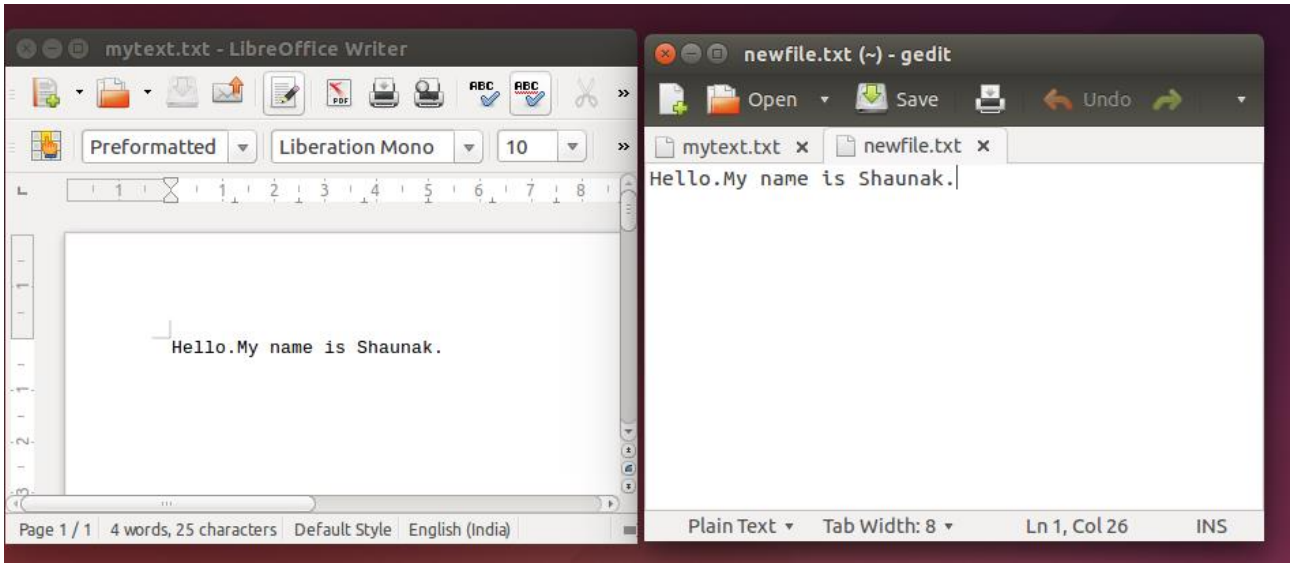


Client Output:



File Output:





Here, the original file name is “mytext.txt” and the newly created file by the client side is “newfile.txt”.

Question 2:

Q2. Write a TCP socket program for calculating the factorial of a number in the server program which is sent by the client program

Code:

Server Code:

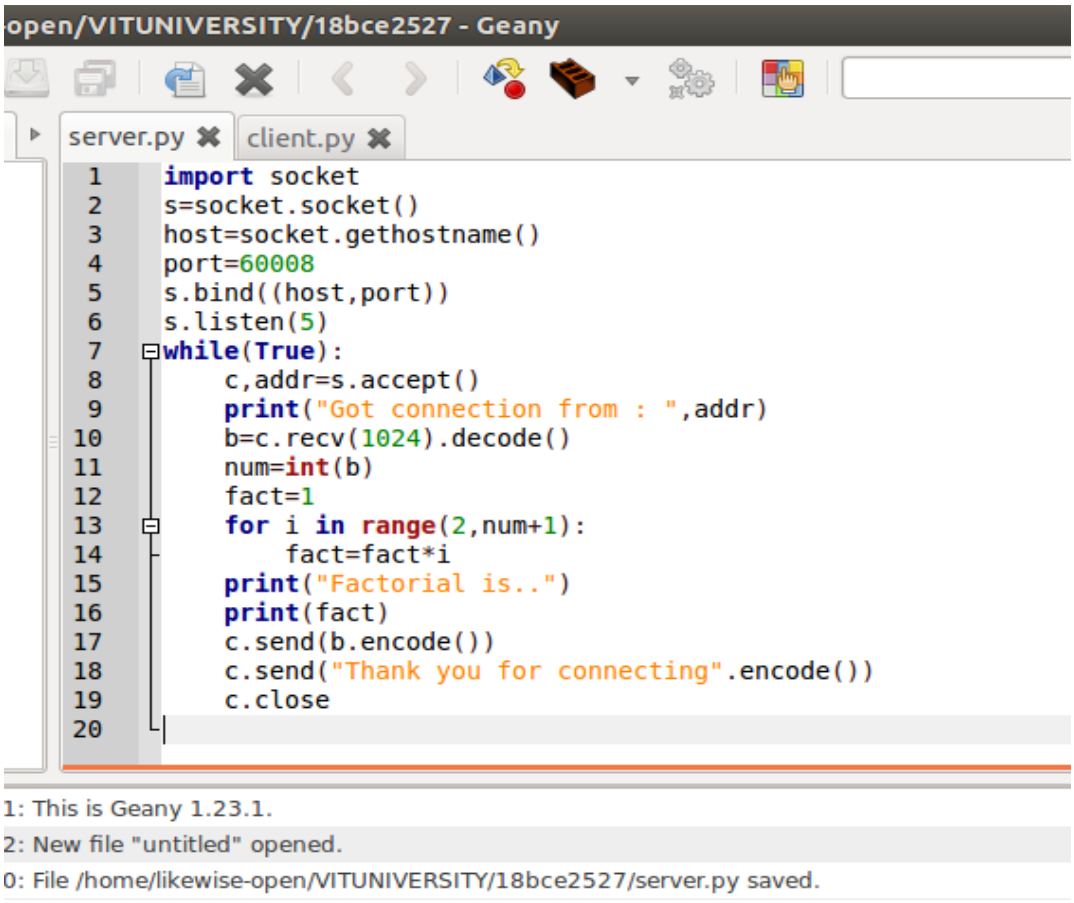
```
import socket
s=socket.socket()
host=socket.gethostname()
port=60008
s.bind((host,port))
s.listen(5)
while(True):
        c,addr=s.accept()
        print("Got connection from : ",addr)
        b=c.recv(1024).decode()
        num=int(b)
        fact=1
        for i in range(2,num+1):
                fact=fact*i
        print("Factorial is..")
        print(fact)
        c.send(b.encode())
        c.send("Thank you for connecting".encode())
        c.close
```

Client Code:

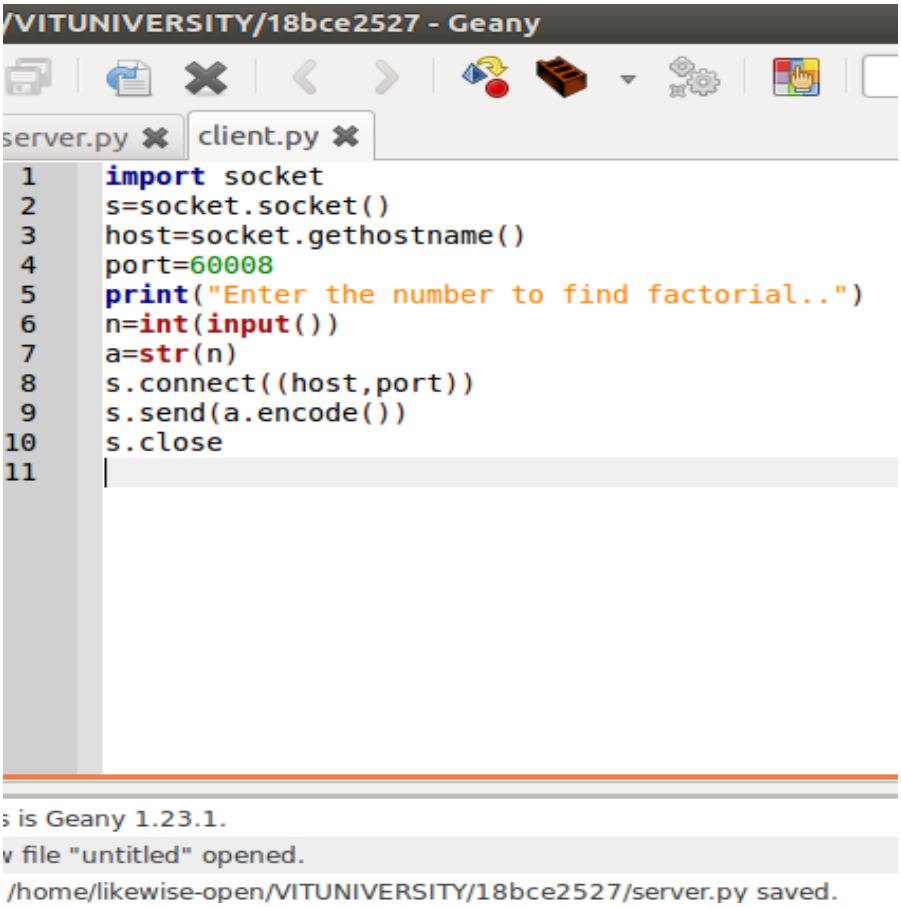
```
import socket
s=socket.socket()
host=socket.gethostname()
port=60008
print("Enter the number to find factorial..")
n=int(input())
a=str(n)
s.connect((host,port))
s.send(a.encode())
s.close
```

Snapshots of typed code:

Server:

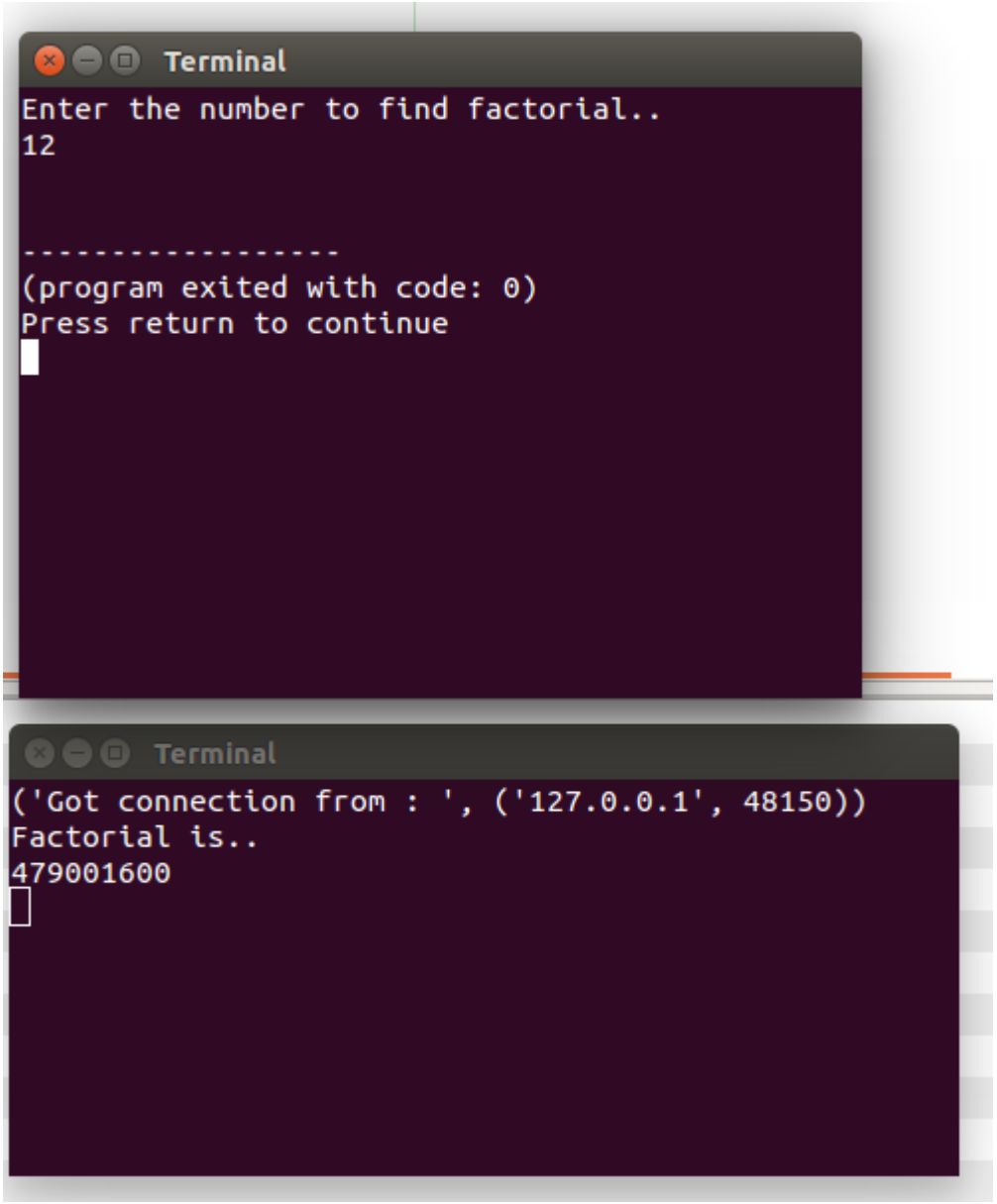


Client:



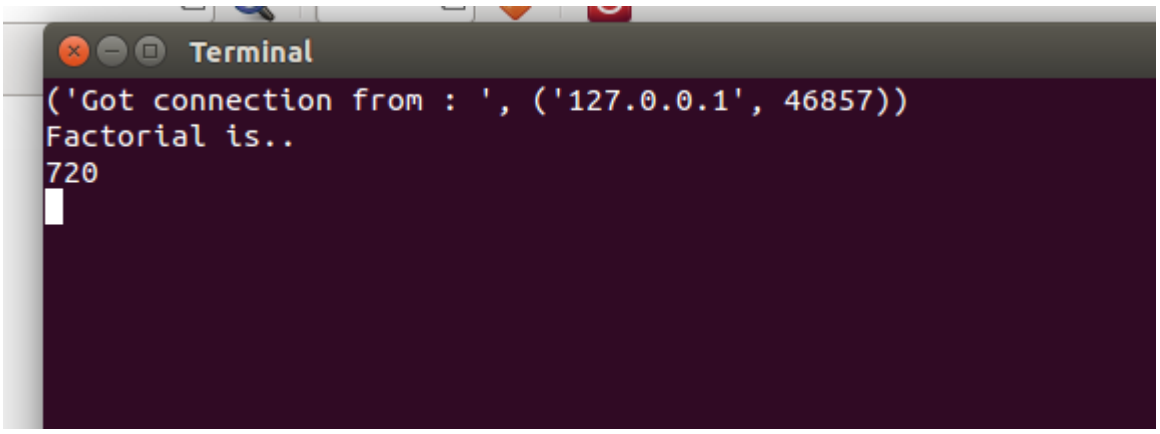
Outputs:

1st Output:

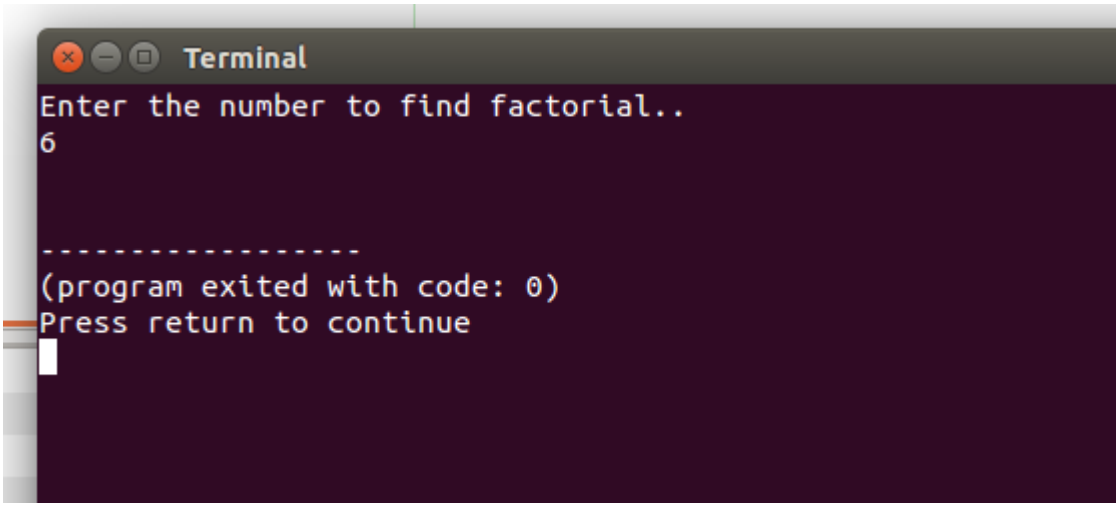


2nd Output:

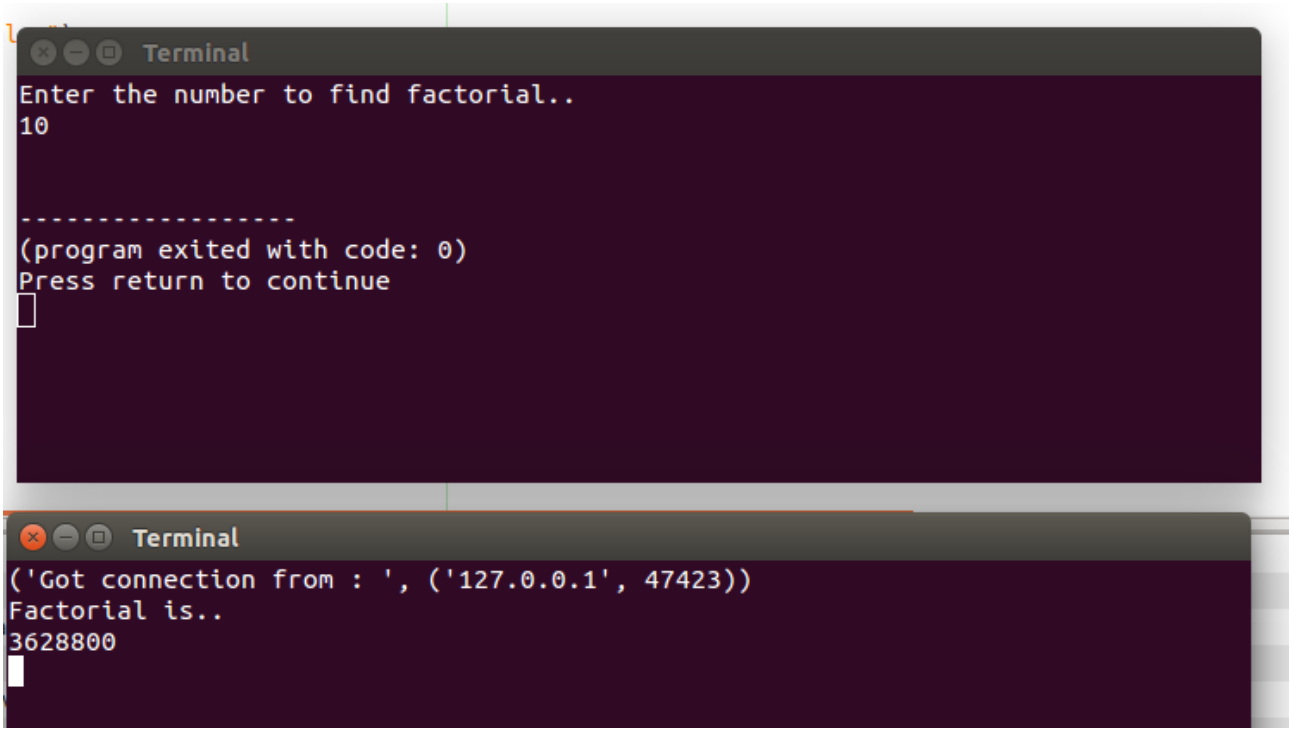
Server Side



Client side:



3rd Output:



Question3:

Q3. Write a TCP socket program for user authentication by using the user [] and password [] arrays in the server program.

Code:

Server Code:

```
import sys,socket
s=socket.socket()
host=socket.gethostname()
port=12375
s.bind((host,port))
s.listen(5)
print ("server is running: ",host,port)
while True:
        c,a=s.accept()
        print a
        usr=c.recv(7)
        pas=c.recv(7)
        print (usr,pas)
        if (usr=='shaunak' and pas=='abcd123'):
                c.send("Authenticated")
        else:
                c.send("invalid User")
c.close()
```

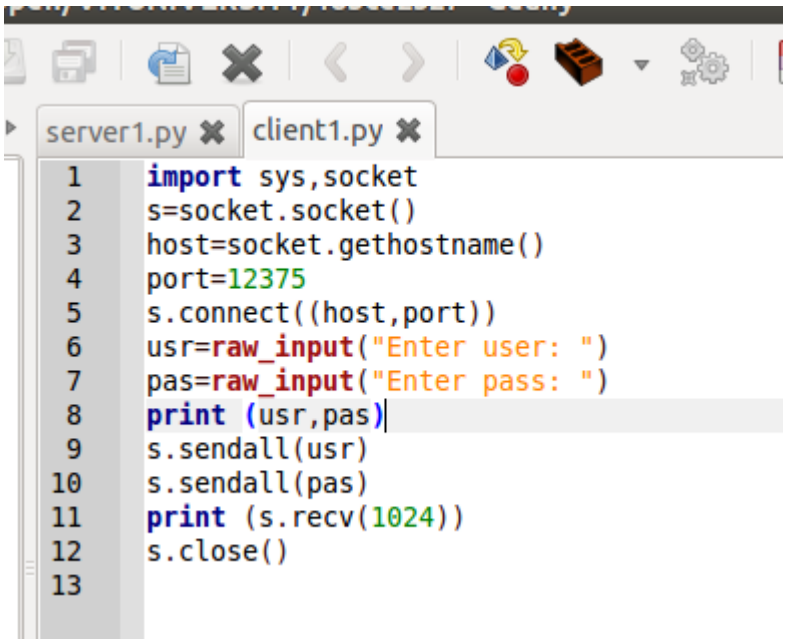
Client Code:

```
import sys,socket
s=socket.socket()
host=socket.gethostname()
port=12375
s.connect((host,port))
usr=raw_input("Enter user: ")
pas=raw_input("Enter pass: ")
print (usr,pas)
s.sendall(usr)
s.sendall(pas)
print (s.recv(1024))
s.close()
```

Snapshots of typed code:

Server:

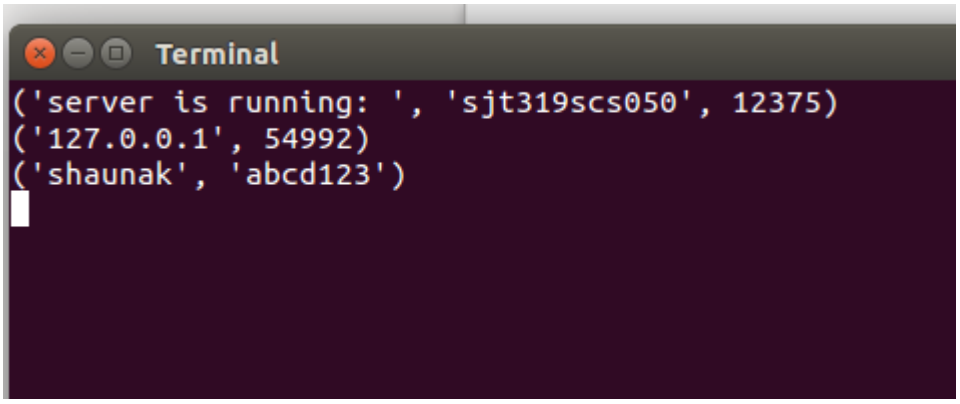
Client :



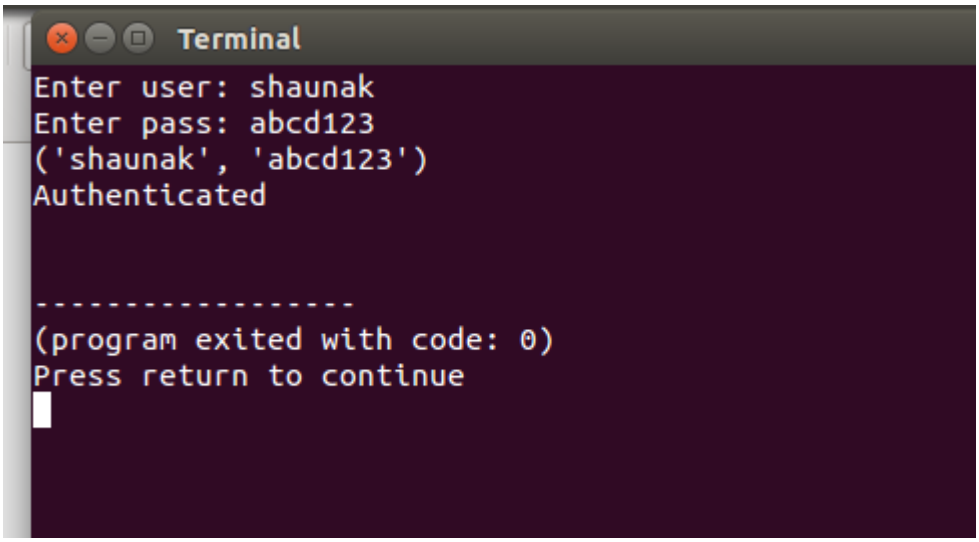
Output:

1st output:

Server side:

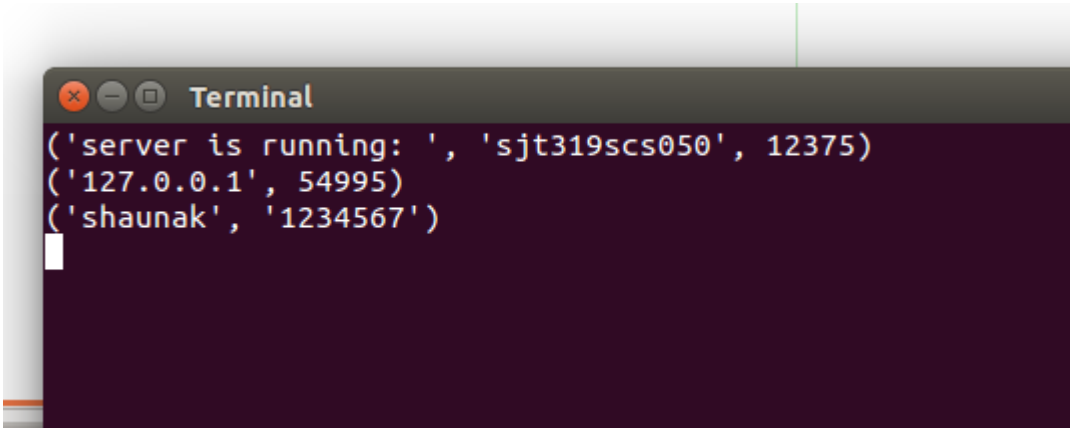


Client side:

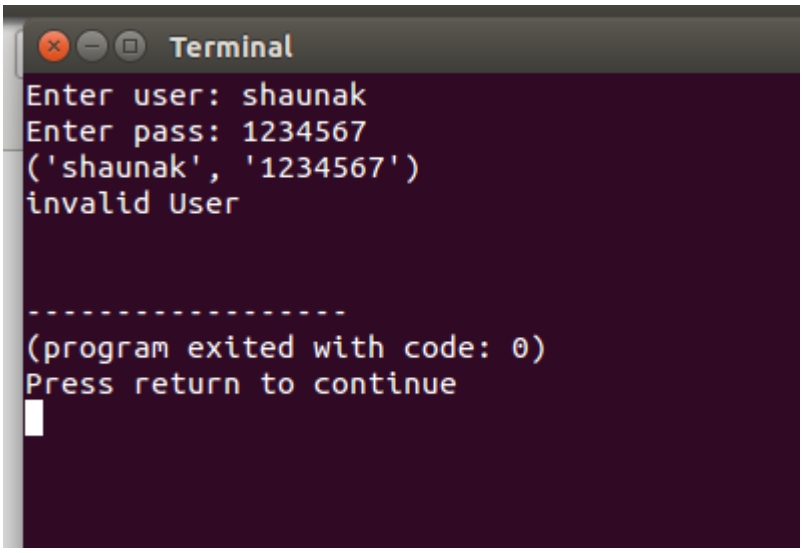


2nd output:

Server Side:



Client Side:



Here the user name is “shaunak” and password is “abcd123” each of length 7 characters.
