“socket” is a default module which comes with python software.

There are two types of communications

1. Connection oriented
2. Connection Less

TCP communication is called connection oriented.
UDP communication is connection less.

socket.socket(family=AF_INET, type=SOCK_STREAM)

This function returns socket object.
The default type of socket is SOCK_STREAM (implements TCP), which is connection oriented.
There is another socket type called SOCK_DGRAM (implements UDP), which is connection less.

socket.accept()
Accept a connection. The socket must be bound to an address and listening for connections.

socket.bind(*address*)
Bind the socket to *address*. The socket must not already be bound.

socket.close()
Mark the socket closed.

socket.connect(*address*)
Connect to a remote socket at *address*.

socket.listen([*backlog*])
Enable a server to accept connections.

socket.recv(*bufsize*[, *flags*])
Receive data from the socket. The return value is a bytes object representing the data received. The maximum amount of data to be received at once is specified by *bufsize*.

socket.send(*bytes*[, *flags*])
Send data to the socket. The socket must be connected to a remote socket.

 # Server Program

```
import socket

ss=socket.socket() # Creating Socket Object
ss.bind(("localhost",60))
ss.listen(10) # Listen 10 connections
print("Server is Running ....")
cc=ss.accept() # (connection,address)
print("Connection Established...")
c=cc[0]
b=c.recv(1024)
msg=b.decode()
print(msg)
msg1="Hello Client"
c.send(msg1.encode())
ss.close()
```

 # Client Program

```
import socket
```

```
s=socket.socket()
s.connect(("localhost",60))
msg="Hello Server"
b=msg.encode()
s.send(b)
b=s.recv(1024)
msg1=b.decode()
print(msg1)
```

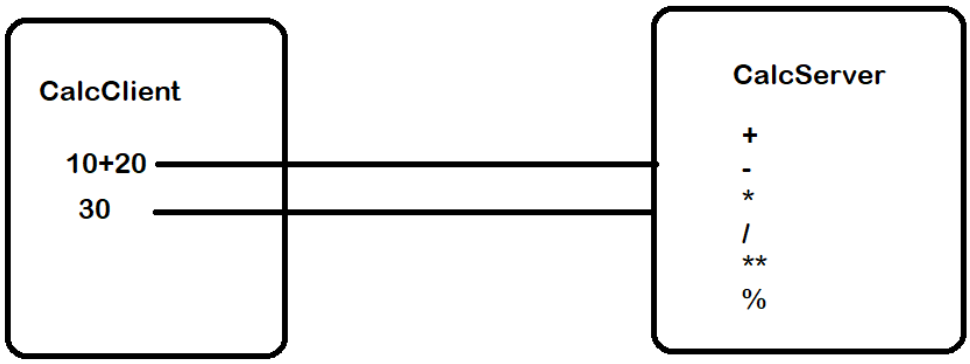
```
E:\python7amdec23>python Server1.py
Server is Running ....
Connection Established...
Hello Server

E:\python7amdec23>
```

```
Command Prompt

E:\python7amdec23>python client1.py
Hello Client

E:\python7amdec23>
```



 # CalcServer

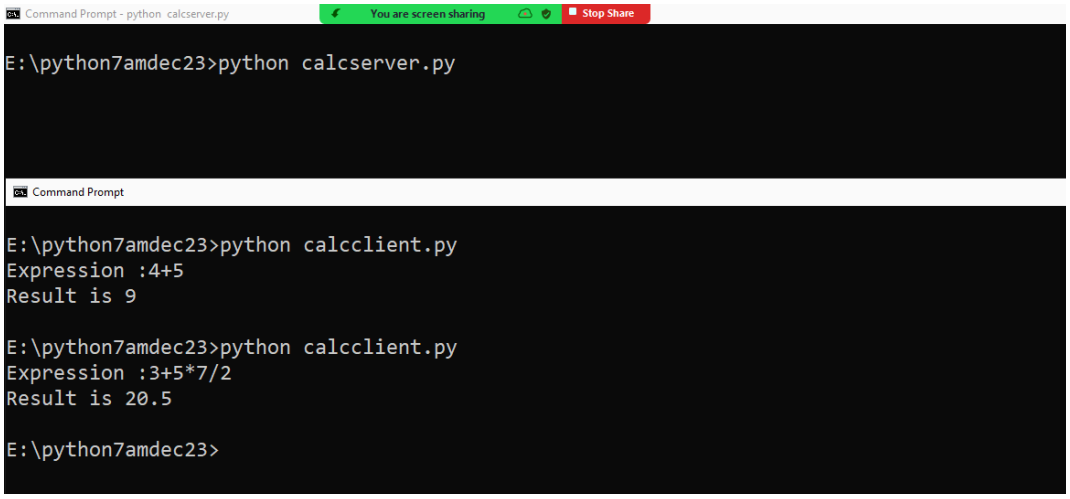
```
import socket
```

```
ss=socket.socket()
ss.bind(("localhost",70))
ss.listen(10)
while True:
    cc=ss.accept()
    c=cc[0]
    b=c.recv(1024)
    expr=b.decode()
    res=eval(expr)
    result=f'Result is {res}'
    b=result.encode()
    c.send(b)

# CalcClient

import socket

s=socket.socket()
s.connect(("localhost",70))
expr=input("Expression :")
b=expr.encode()
s.send(b)
b=s.recv(1024)
result=b.decode()
print(result)
```



OS Module

OS or Operating System module is a default module which comes with python software.
OS module provides the functions to communicate with operating system (OR) python program performs the functions of operating system using OS module.

OS module or functions of OS module are operating system dependent.

```
>>> import os
>>> os.name
'nt'
```