Name: Shivangi Kochrekar
UID: 2018130020

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Lab 8: Socket Programming

Aim: To implement Socket Programming and establish a connection between client and server.

Theory:

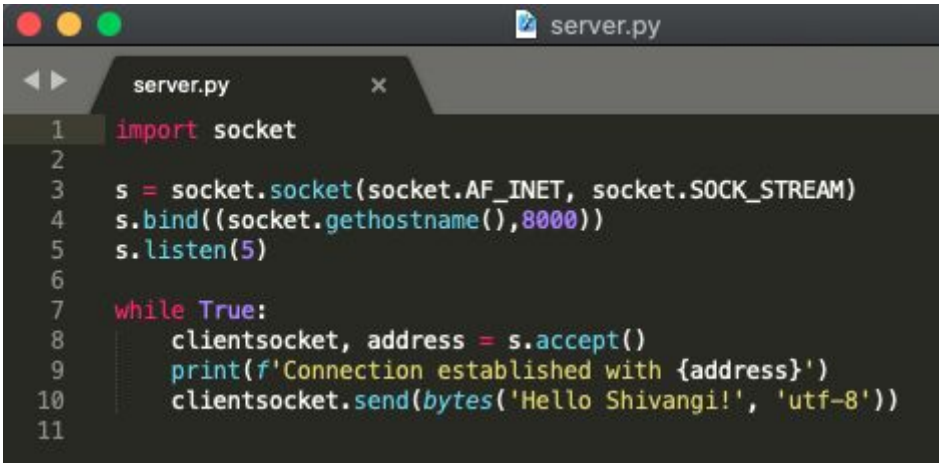
Socket programming is a way of connecting two nodes on a network to communicate with each other. One socket(node) listens on a particular port at an IP, while another socket reaches out to the other to form a connection. Server forms the listener socket while the client reaches out to the server.They are the real backbones behind web browsing. In simpler terms there is a server and a client.

Code:

- **server.py**

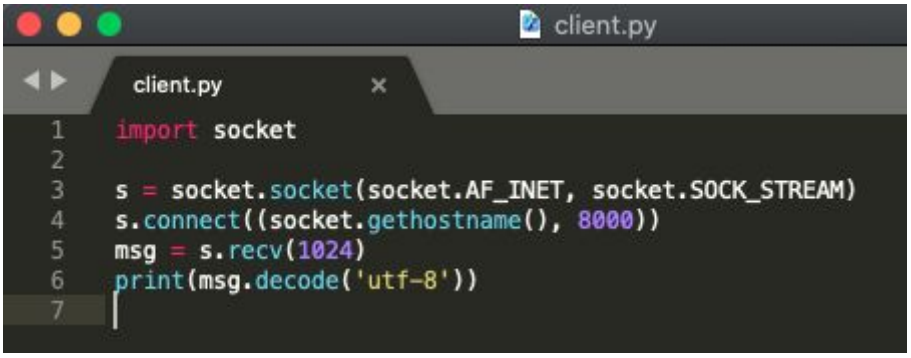
```
import socket
s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.bind((socket.gethostname(), 8000))
s.listen(5)

while True:
        clientsocket, address = s.accept()
        print(f'Connection established with {address}')
        clientsocket.send(bytes('Hello World!', 'utf-8'))
```



- **client.py**
  import socket

  s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
  s.connect((socket.gethostname(), 8000))
  msg = s.recv(1024)
  print(msg.decode('utf-8'))



Output:

- **server.py**

- **client.py**

Conclusion:

I understood how to successfully establish a connection between client and server using socket programming.