

Program 3

Aim of the program: Using TCP/IP sockets, write a client-server program to make client sending the file name and the server to send back the contents of the requested file if present.

Code:

ClientTCP.py

```
from socket import *
```

```
serverName = '127.0.0.1'  
serverPort = 12000  
clientSocket = socket(AF_INET, SOCK_STREAM)  
clientSocket.connect((serverName, serverPort))  
sentence = input("\nEnter file name: ")  
clientSocket.send(sentence.encode())  
filecontents = clientSocket.recv(1024).decode()  
print("\nFrom Server:\n")  
print(filecontents)  
clientSocket.close()
```

ServerTCP.py

```
from socket import *
```

```
serverName = "127.0.0.1"  
serverPort = 12000  
serverSocket = socket(AF_INET, SOCK_STREAM)  
serverSocket.bind((serverName, serverPort))  
serverSocket.listen(1)
```

```
while True:
```

```
    print("The server is ready to receive")  
    connectionSocket, addr = serverSocket.accept()  
    sentence = connectionSocket.recv(1024).decode()  
    try:  
        with open(sentence, "r") as file:  
            fileContents = file.read(1024)  
            connectionSocket.send(fileContents.encode())  
            print('\nSent contents of ' + sentence)  
    except FileNotFoundError:  
        error_message = "Error: File not found."  
        connectionSocket.send(error_message.encode())  
        print("\nFile not found: " + sentence)  
    connectionSocket.close()
```

```
from socket import *
from threading import Thread

def start_server():
    serverName = "127.0.0.1"
    serverPort = 12000
    serverSocket = socket(AF_INET, SOCK_STREAM)
    serverSocket.bind((serverName, serverPort))
    serverSocket.listen(1)
    print("The server is ready to receive")

    while True:
        connectionSocket, addr = serverSocket.accept()
        print(f"Connection from {addr}")
        sentence = connectionSocket.recv(1024).decode()
        try:
            with open(sentence, "r") as file:
                l = file.read(1024)
                connectionSocket.send(l.encode())
        except FileNotFoundError:
            connectionSocket.send("File not found.".encode())
        connectionSocket.close()

# Run the server in a separate thread
server_thread = Thread(target=start_server, daemon=True)
server_thread.start()
```

```
from socket import *

serverName = "127.0.0.1"
serverPort = 12000
clientSocket = socket(AF_INET, SOCK_STREAM)
clientSocket.connect((serverName, serverPort))

# Prompt for the filename
sentence = input("Enter the file name: ")
clientSocket.send(sentence.encode())

# Receive file content or error message
filecontents = clientSocket.recv(1024).decode()
print('From Server:', filecontents)

clientSocket.close()
```

classmate
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Page _____

2/2u WPyg TCP / IP

Client.py

```
from socket import *
serverName = "127.0.0.1"
serverPort = 12000
clientSocket = socket(AF_INET, SOCK_STREAM)
clientSocket.connect((serverName, serverPort))
clientSocket.send("GET / HTTP/1.1\r\nHost: www.google.com\r\n\r\n")
fileContent = clientSocket.recv(1024).decode()
clientSocket.close()
```

Server.py

```
from socket import *
serverName = "127.0.0.1"
serverPort = 12000
serverSocket = socket(AF_INET, SOCK_STREAM)
serverSocket.bind((serverName, serverPort))
serverSocket.listen(1)
print("The server is ready to receive")
while True:
    connectionSocket, addr = serverSocket.accept()
    content = connectionSocket.recv(1024).decode()
    if content == "GET / HTTP/1.1\r\nHost: www.google.com\r\n\r\n":
        connectionSocket.send("HTTP/1.1 200 OK\r\nContent-Type: text/html\r\n\r\n")
        connectionSocket.send(open("index.html", "r").read())
    connectionSocket.close()
```

Output:

```
In [1]: from socket import *
from threading import Thread

def start_server():
    serverName = "127.0.0.1"
    serverPort = 12000
    serverSocket = socket(AF_INET, SOCK_STREAM)
    serverSocket.bind((serverName, serverPort))
    serverSocket.listen(1)
    print("The server is ready to receive")

    while True:
        connectionSocket, addr = serverSocket.accept()
        print(f"Connection from {addr}")
        sentence = connectionSocket.recv(1024).decode()
        try:
            with open(sentence, "r") as file:
                l = file.read(1024)
            connectionSocket.send(l.encode())
        except FileNotFoundError:
            connectionSocket.send("File not found.".encode())
        connectionSocket.close()

# Run the server in a separate thread
server_thread = Thread(target=start_server, daemon=True)
server_thread.start()
```

The server is ready to receive

```
In [2]: from socket import *

serverName = "127.0.0.1"
serverPort = 12000
clientSocket = socket(AF_INET, SOCK_STREAM)
clientSocket.connect((serverName, serverPort))

# Prompt for the filename
sentence = input("Enter the file name: ")
clientSocket.send(sentence.encode())

# Receive file content or error message
filecontents = clientSocket.recv(1024).decode()
print('From Server:', filecontents)

clientSocket.close()
```

Connection from ('127.0.0.1', 63844)
Enter the file name: filename.txt
From Server: Hello

OUTPUT
Server Output:
The server is ready to receive
Client Output
Client Output Connection from ('127.0.0.1', 63844)
Enter file name: filename.txt
From Server: Hello
It contains some text