CS359: ASSIGNMENT-8

SIDDHARTH SANSKRITAYAN

1901CS75

Server side code server.py:

sendPrescription() function:

Takes client socket and the message (disease name) as parameters and sends the corresponding medicine to the client if data found else returns a message stating data not found in the server:

```python
import threading
import socket
import csv
host = '0.0.0.0'
port = 8050


# function which takes client socket and disease name as parameter and sends the corresponding medicine to the client
def sendPrescription(client, message):
    # open csv file and read the records one by one
    file = open("prescription.csv")
    csvreader = csv.reader(file)
    # skip the first row of the csv file
    next(csvreader)
    flag = 0
    for row in csvreader:
        # when disease name in the message matches with some entry in the csv file, send corresponding medicine name
        if row[0].lower() == message.lower():
            client.send(("Medicine: " + row[1]).encode())
            flag = 1
    # if disease name not in the csv list
    if flag == 0:
        client.send("Data not found in the server".encode())
    file.close()
```

handleClient() function:

Handles requests of a client (receive messages from the client and pass the messages to the sendPrescription function):

```python
# function to handle requests of a client
def handleClient(client, addr):
    while True:
        try:
            # receive message from client and send them the prescription
            message = client.recv(1024).decode()
            sendPrescription(client, message)
        except:
            # when user closes the chat
            print(f'Client {addr} left the chat')
            client.close()
            break
```

Create and initialize server socket, accept connections from the client sockets and create threads for each of the client to handle their requests:

```
# Initialize the server
def startServer():
    serverSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    serverSocket.bind((host, port))
    serverSocket.listen()
    print('Server is running and listening on PORT:', port)
    while True:
        # accept connection requests from the clients
        connectionSocket, addr = serverSocket.accept()
        print("Connection received from client", addr)

        # create thread to handle the messages from the client
        thread = threading.Thread(target=handleClient, args=(connectionSocket, addr))
        thread.start()


if __name__ == "__main__":
    startServer()
```

Client side code client.py:

Connect to the server and send the message (disease name) and finally receive the corresponding medicine/prescription:

```
import threading
import socket
clientSocket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

# Start connection to the server to send and receive messages
def startClient():
    # Connect to the server
    clientSocket.connect(('192.168.56.1', 8050))
    while True:
        try:
            # take disease name as input from the client and send it to the server
            message = input("Enter the name of disease/ailment: ")
            clientSocket.send(message.encode('utf-8'))

            # print the message received from the server
            message = clientSocket.recv(1024)
            print(message.decode('utf-8'))
        except:
            print('Error!')
            clientSocket.close()
            break

if __name__ == "__main__":
    startClient()
```

Screenshots of sample input and output:

Server side terminal:

```
C:\Users\Siddharth\Documents\Networks Lab Assignment\Lab_8>server.py
Server is running and listening on PORT: 8050
Connection received from client ('192.168.56.1', 5543)
Connection received from client ('192.168.56.1', 5544)
```

Client side terminal:

Client1:

```
C:\Users\Siddharth\Documents\Networks Lab Assignment\Lab_8>client.py
Enter the name of disease/ailment: fever
Medicine: Paracetamol 650mg
Enter the name of disease/ailment: stomach ache
Medicine: Pudina Hara
Enter the name of disease/ailment: joint pain
Medicine: Diclofenac gel
```

Client2:

```
C:\Users\Siddharth\Documents\Networks Lab Assignment\Lab_8>client.py
Enter the name of disease/ailment: headache
Medicine: Crocin 500mg
Enter the name of disease/ailment: muscle pain
Data not found in the server
Enter the name of disease/ailment: cough
Medicine: Honitus syrup 2 tsp
```

When Client2 closes the chat:

```
C:\Users\Siddharth\Documents\Networks Lab Assignment\Lab_8>server.py
Server is running and listening on PORT: 8050
Connection received from client ('192.168.56.1', 5543)
Connection received from client ('192.168.56.1', 5544)
Client ('192.168.56.1', 5544) left the chat
```