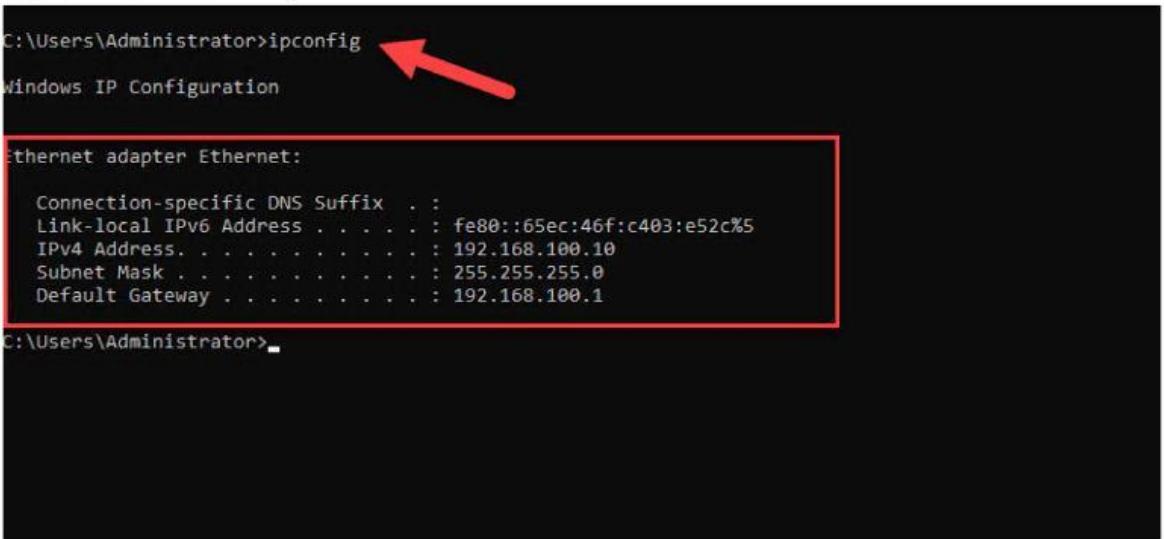


Socket Programming

This command is used on the server PC:



```
Administrator: Command Prompt
C:\Users\Administrator>ipconfig
Windows IP Configuration

:thernet adapter Ethernet:

Connection-specific DNS Suffix . . . .
Link-local IPv6 Address . . . . . : fe80::65ec:46f:c403:e52c%5
IPv4 Address . . . . . : 192.168.100.10
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.100.1

C:\Users\Administrator>
```

Q1) Complete the missing chunks in the code in red dotted line:

chatServer.py File

```
import socket # Import the socket library used for socket programming in python

def main():

    HOST = '.....' # Host: Client IP address (0.0.0.0 is used for listening to any client)

    PORT =5555 # Port: port number (You can choose a number from 1024 – 65535)

    # Create a socket for the client (socket.AF_INET: socket will be used for communication using IPv4 addresses
    # and protocols) (socket.SOCK_STREAM: Uses the TCP protocol)

    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
        s.bind((.....)) # Bind the TCP socket to an IP address and Port number
        s.listen() # The server is ready to accept incoming connection requests
        while True:
            conn, addr = s.accept() # Accepts an incoming connection request from a TCP client
            #conn variable: connection to the client
            # addr variable: address of the client
            print('Connected by', addr) #Print the address of the client connected to the server
            with conn:
                while True:
                    data = conn.recv(1024) # Receive data from server
                    if not data:
                        break
                    print('Received:', data.decode()) # Print the data received (Decode from byte data type to String)
                    conn.sendall(data) #Send the data back to the client
    if __name__ == '__main__':
        main()
```

Q2) Complete the missing chunks in the code in red dotted line:

chatClient.py File

```
import socket # Import the socket library used for socket programming in python

def main():

    HOST == '.....' # Host: Server IP address (use the command prompt to get the server IP
    address)

    PORT = 5555 # Port: port number (same as the server)

    # Create a socket for the client (socket.AF_INET: socket will be used for communication using IPv4 addresses
    # and protocols) (socket.SOCK_STREAM: Uses the TCP protocol)

    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
        s.connect((.....)) # Connect the TCP socket to the server's IP address and Port number

        while True:
            message = input('Message: ') # Promoting the user to enter a message in the command prompt
            s.sendall(message.encode()) # Send data to the server (Encode from String data type to byte)

            if message == 'quit': # if the client type the messages quit, the code will stop running
                break

            data = s.recv(1024) # Receive data from the server
            print('Received:', data.decode()) # Print the data received (Decode from byte data type to String)

    if __name__ == '__main__':
        main()
```