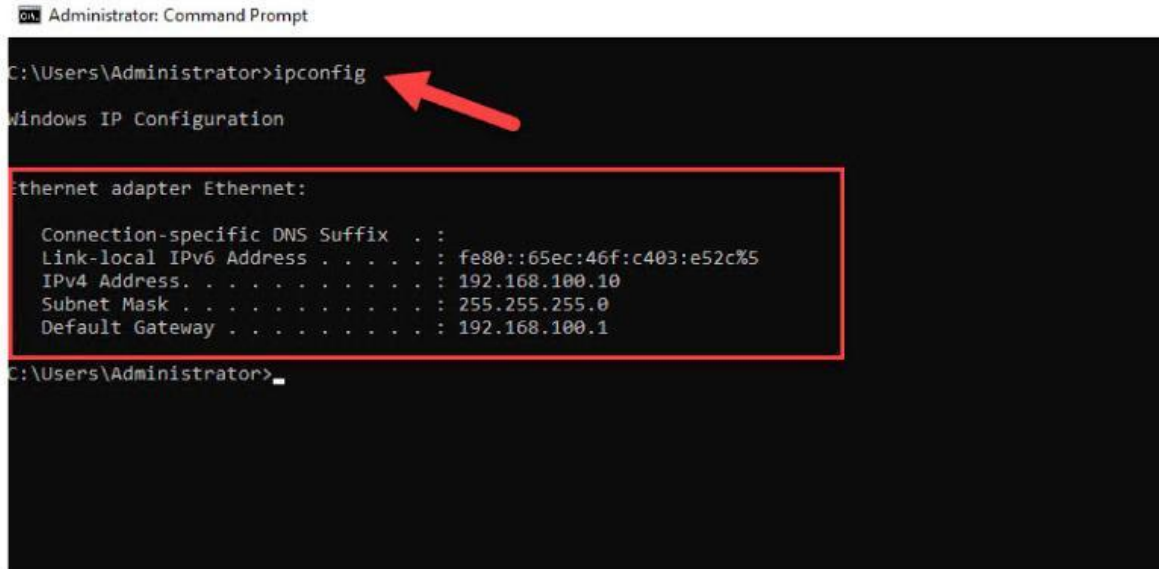


# Socket Programming

This command is used on the server PC:



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

Ethernet 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()
```