Computer Network: Week 3

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Section: H

1) Write a python code snippet for echo client and echo server:

client.py

```
import socket


HOST = '127.0.0.1'

PORT    = 12345


with  socket.socket(socket.AF_INET, socket.SOCK_STREAM) as client_socket        :
 client_socket.connect((HOST, PORT))

 message = "Hello, Server!"  client_socket.sendall(message.encode())
 data = client_socket.recv(1024)

print                (f"Received from server: {data.decode()}")
```

server.py

```
import socket

HOST = '127.0.0.1'
PORT = 12345
with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as server_socket:
    server_socket.bind((HOST, PORT)) server_socket.listen()
    print(f"Server listening on {HOST}:{PORT}")
conn, addr = server_socket.accept() with conn: print(f"Connected by
    {addr}") while True:
                data = conn.recv(1024)
if not data:
      break
conn.sendall(data)
```

2) Python code snippet for client server communication using TCP and UDP sockets tcpclient.py

tcpserver.py

```
import socket

HOST = '127.0.0.1'
PORT = 65432
with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as server_socket:
    server_socket.bind((HOST, PORT)) server_socket.listen()
    print(f"TCP Server listening on {HOST}:{PORT}")
conn, addr = server_socket.accept() with conn:
    print(f"Connected by {addr}") while True: data =
    conn.recv(1024) if not data:
    break conn.sendall(b"TCP Server Response: " + data)
```

udpserver.py

```
import socket

HOST = '127.0.0.1'
PORT = 54321
with socket.socket(socket.AF_INET, socket.SOCK_DGRAM) as udp_server:
    udp_server.bind((HOST, PORT)) print(f"UDP Server listening on
    {HOST}:{PORT}")
data, addr = udp_server.recvfrom(1024) print(f"Received from {addr}:
    {data.decode()}") udp_server.sendto(b"UDP Server Response: " + data, addr)
```

udpclient.py

```
import socket

HOST = '127.0.0.1'
PORT = 54321
with socket.socket(socket.AF_INET, socket.SOCK_DGRAM) as udp_client:
    message = b"Hello UDP Server!"
    udp_client.sendto(message, (HOST, PORT)) data, _ =
    udp_client.recvfrom(1024)

print(f"Received from UDP Server: {data.decode()}")
```

Execution of codes: