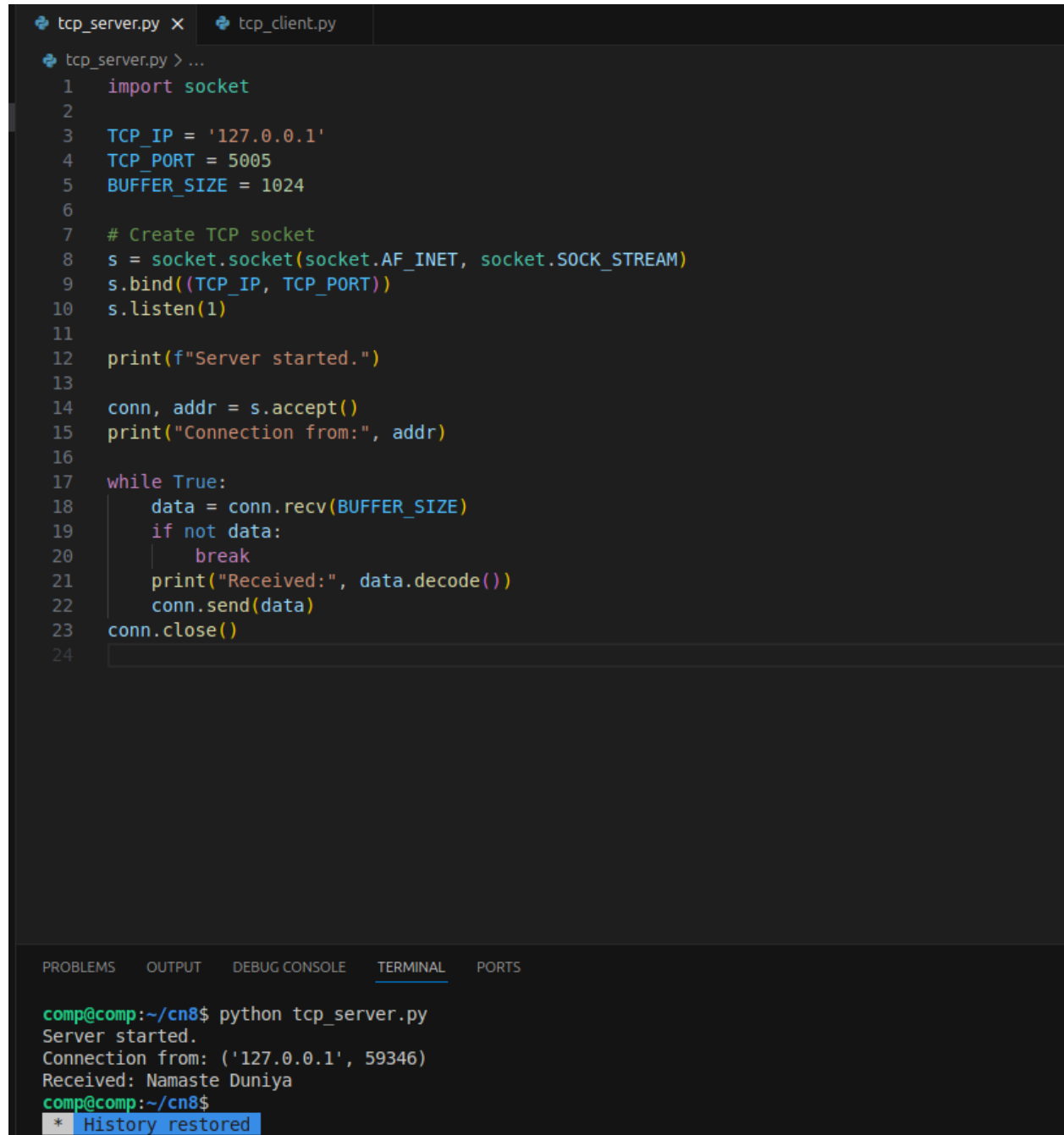


EXP-8 CN

1) TCP

A)TCP_SERVER



The image shows a code editor with two tabs: `tcp_server.py` and `tcp_client.py`. The `tcp_server.py` tab is active, displaying the following Python code:

```
1  import socket
2
3  TCP_IP = '127.0.0.1'
4  TCP_PORT = 5005
5  BUFFER_SIZE = 1024
6
7  # Create TCP socket
8  s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
9  s.bind((TCP_IP, TCP_PORT))
10 s.listen(1)
11
12 print(f"Server started.")
13
14 conn, addr = s.accept()
15 print("Connection from:", addr)
16
17 while True:
18     data = conn.recv(BUFFER_SIZE)
19     if not data:
20         break
21     print("Received:", data.decode())
22     conn.send(data)
23 conn.close()
24
```

Below the code editor is a terminal window with the following output:

```
comp@comp:~/cn8$ python tcp_server.py
Server started.
Connection from: ('127.0.0.1', 59346)
Received: Namaste Duniya
comp@comp:~/cn8$
```

A status bar at the bottom of the terminal shows a blue icon and the text `* History restored`.

B) TCP_CLIENT

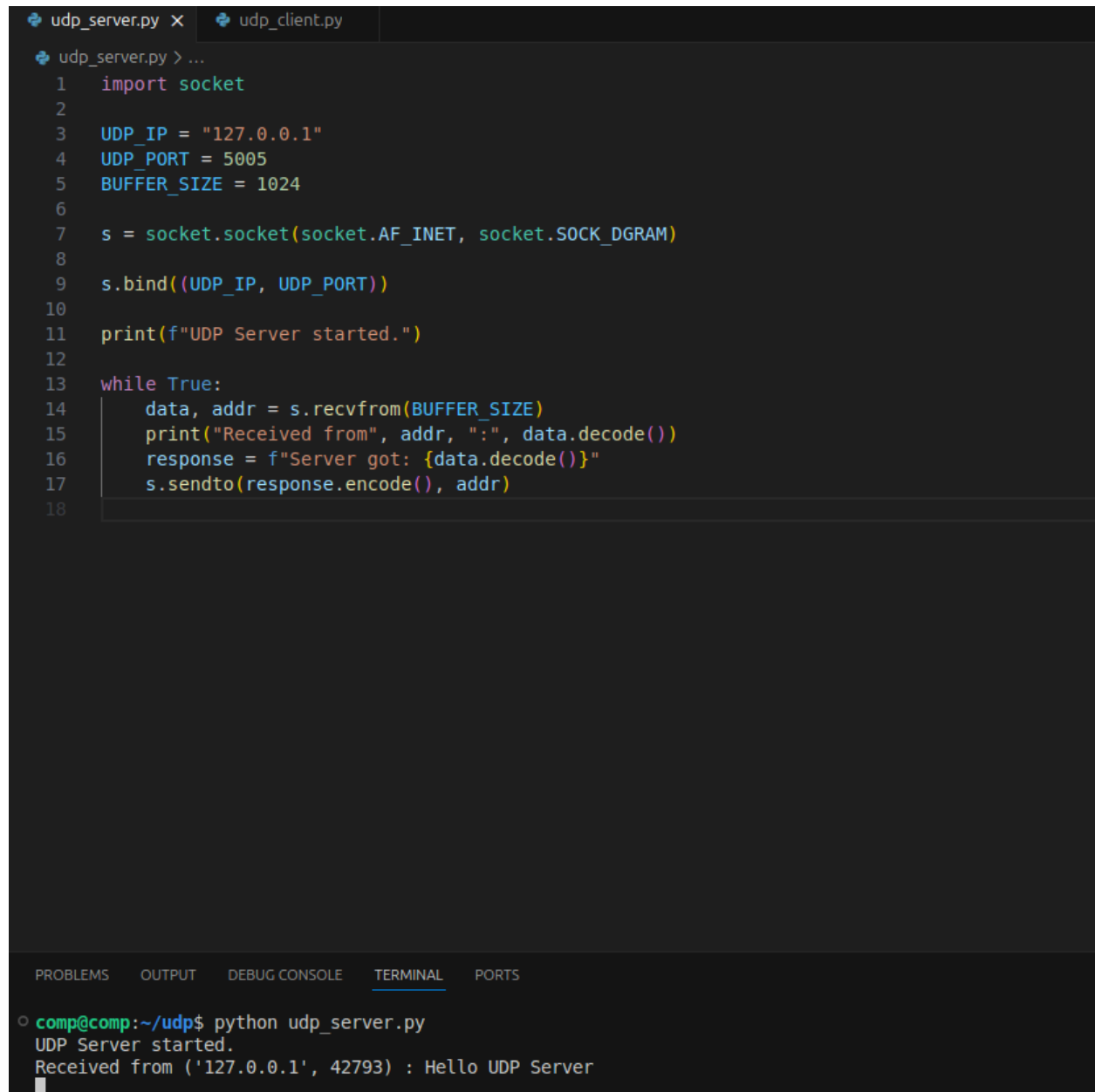
```
tcp_client.py > ...
1  import socket
2
3  TCP_IP = '127.0.0.1'
4  TCP_PORT = 5005
5  BUFFER_SIZE = 1024
6  MESSAGE = "Namaste Duniya"
7
8
9  s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
10 s.connect((TCP_IP, TCP_PORT))
11
12 print(" Sending:", MESSAGE)
13 s.send(MESSAGE.encode())
14
15 data = s.recv(BUFFER_SIZE)
16 print(" Received from server:", data.decode())
17
18 s.close()
19
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
comp@comp:~/cn8$ python tcp_server.py
Server started.
Connection from: ('127.0.0.1', 59346)
Received: Namaste Duniya
comp@comp:~/cn8$
* History restored
```

2)UDP

A)UDP_SERVER



The image shows a code editor with two tabs: `udp_server.py` and `udp_client.py`. The `udp_server.py` tab is active, displaying the following Python code:

```
1  import socket
2
3  UDP_IP = "127.0.0.1"
4  UDP_PORT = 5005
5  BUFFER_SIZE = 1024
6
7  s = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
8
9  s.bind((UDP_IP, UDP_PORT))
10
11 print(f"UDP Server started.")
12
13 while True:
14     data, addr = s.recvfrom(BUFFER_SIZE)
15     print("Received from", addr, ":", data.decode())
16     response = f"Server got: {data.decode()}"
17     s.sendto(response.encode(), addr)
18
```

Below the code editor is a terminal window with tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The terminal shows the execution of the script:

```
comp@comp:~/udp$ python udp_server.py
UDP Server started.
Received from ('127.0.0.1', 42793) : Hello UDP Server
```

B)UDP_CLIENT

```
udp_client.py > ...
1  import socket
2
3  UDP_IP = "127.0.0.1"
4  UDP_PORT = 5005
5  BUFFER_SIZE = 1024
6  MESSAGE = "Hello UDP Server"
7
8  s = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
9
10 print("Sending:", MESSAGE)
11 s.sendto(MESSAGE.encode(), (UDP_IP, UDP_PORT))
12
13 data, server = s.recvfrom(BUFFER_SIZE)
14 print("Received from server:", data.decode())
15
16 s.close()
17
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
● comp@comp:~/udp$ python udp_client.py
Sending: Hello UDP Server
Received from server: Server got: Hello UDP Server
○ comp@comp:~/udp$
```