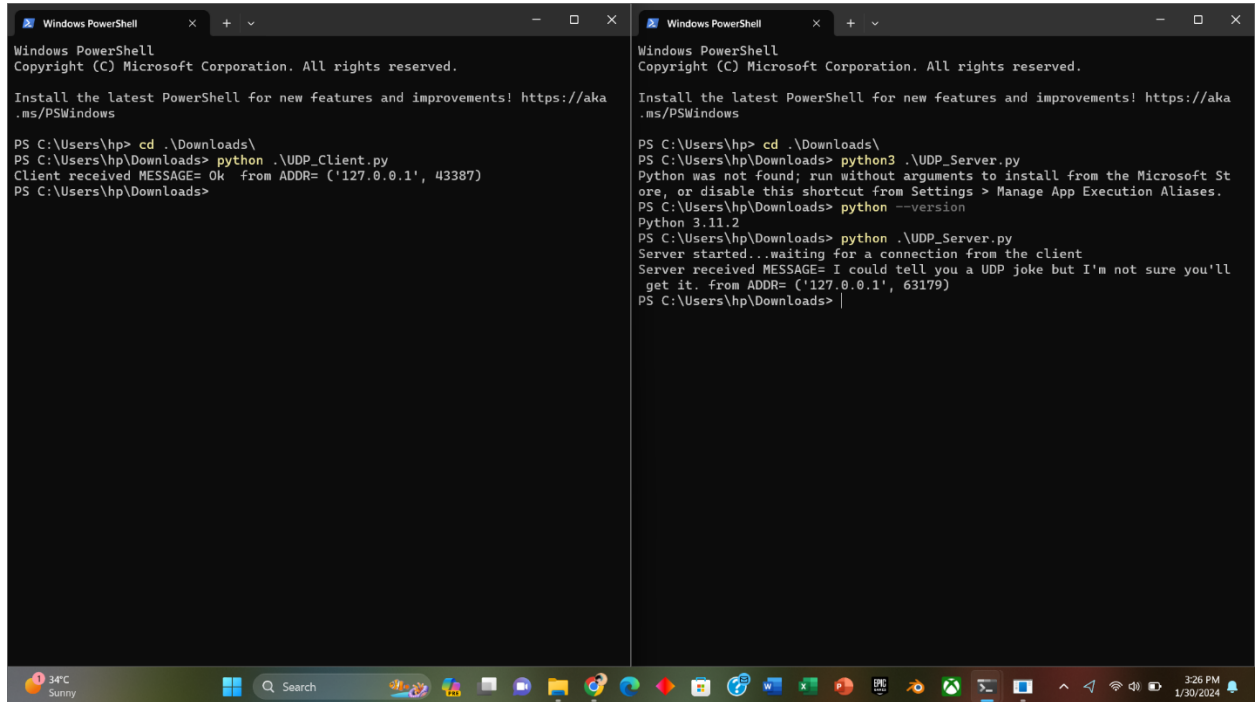


LAB 3: Socket Programming using Python

PART 1: UDP SOCKETS

Q1)



```
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PS C:\Users\hp> cd .\Downloads\
PS C:\Users\hp\Downloads> python .\UDP_Client.py
Client received MESSAGE= Ok from ADDR= ('127.0.0.1', 43387)
PS C:\Users\hp\Downloads>

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PS C:\Users\hp> cd .\Downloads\
PS C:\Users\hp\Downloads> python3 .\UDP_Server.py
Python was not found; run without arguments to install from the Microsoft Store, or disable this shortcut from Settings > Manage App Execution Aliases.
PS C:\Users\hp\Downloads> python --version
Python 3.11.2
PS C:\Users\hp\Downloads> python .\UDP_Server.py
Server started...waiting for a connection from the client
Server received MESSAGE= I could tell you a UDP joke but I'm not sure you'll get it. from ADDR= ('127.0.0.1', 63179)
PS C:\Users\hp\Downloads> |
```

Q2)

```
PS C:\Users\hp\Downloads> python -u "c:\Users\hp\Downloads\udp_serv.py"
Server started...waiting for a connection from the client
Server received MESSAGE= I could tell you a UDP joke but I'm not sure you'll get it. from ADDR= ('192.168.197.252', 49666)
PS C:\Users\hp\Downloads>

PS C:\Users\vaibhav> python -u "c:\Users\vaibhav\Downloads\UDP_Client.py"
Client received MESSAGE= Ok from ADDR= ('192.168.197.232', 43369)
PS C:\Users\vaibhav> |
```

Q3)

[illegible]

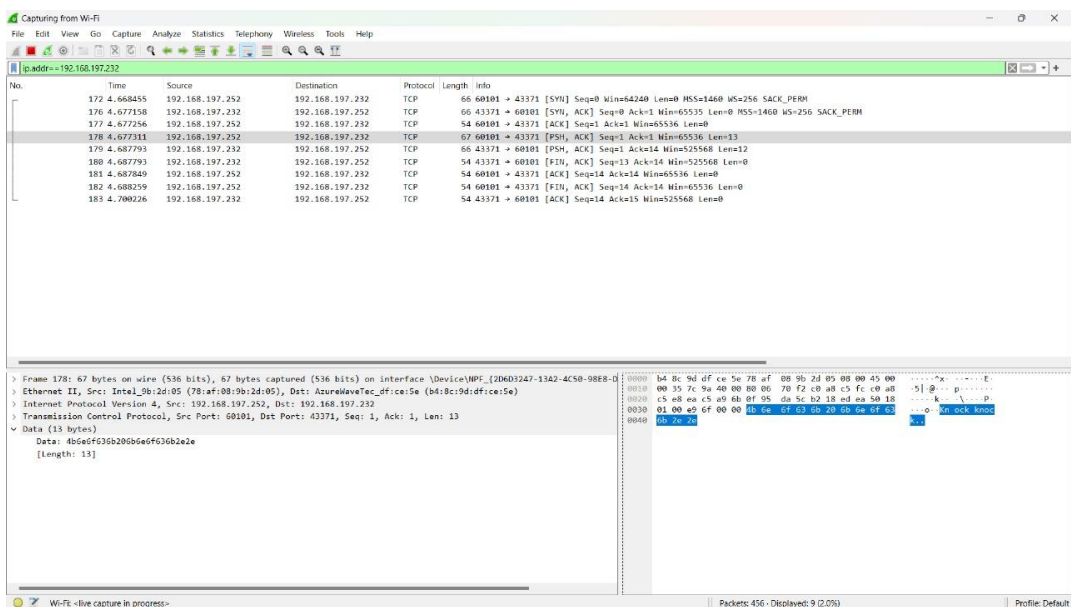
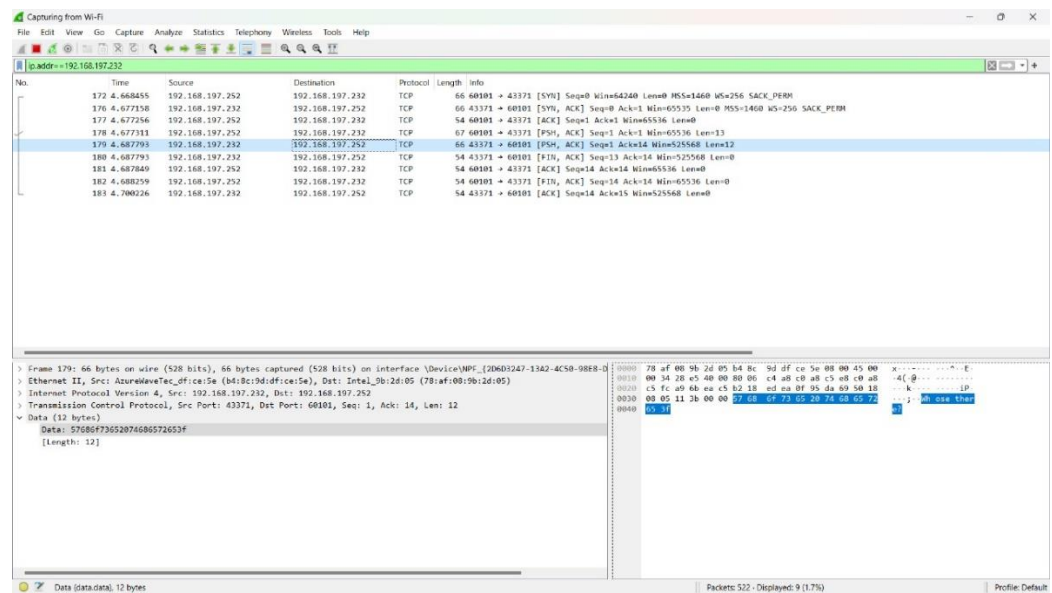
```
PS C:\Users\vaibhav> python -u "c:\Users\vaibhav\Downloads\UDP_Client.py"
Client received MESSAGE= 2024-01-30 16:06:08 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:10 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:12 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:14 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:15 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:16 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:18 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:20 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:21 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:23 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:24 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:26 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:27 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:29 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:31 from ADDR= ('192.168.197.232', 43369)
Client received MESSAGE= 2024-01-30 16:06:32 from ADDR= ('192.168.197.232', 43369)
```

Q4)

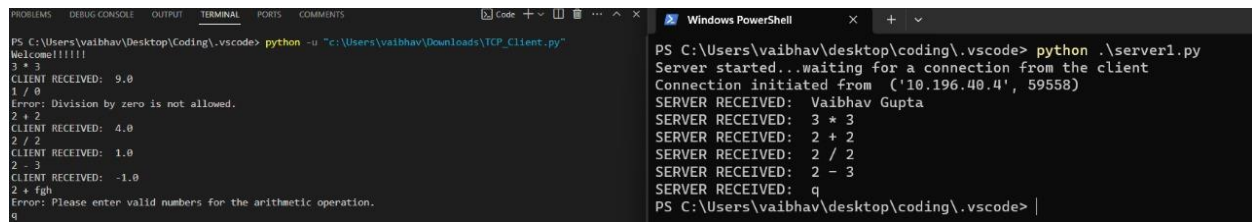
```
PS C:\Users\hp\Downloads> python -u "c:\Users\hp\Downloads\TCP_Server.py"
Server started...waiting for a connection from the client
Connection initiated from ('127.0.0.1', 61854)
SERVER RECEIVED: Knock knock..
PS C:\Users\hp\Downloads>
```

```
PS C:\Users\hp\Downloads> python .\TCP_Client.py
CLIENT RECEIVED: Whose there?
PS C:\Users\hp\Downloads> |
```

Q5)



Q6)



```
PS C:\Users\vaibhav\Desktop\coding\.vscode> python -u "c:\Users\vaibhav\Downloads\TCP_Client.py"
Welcome!!!!!!
3 * 3
CLIENT RECEIVED: 9.0
1 / 0
Error: Division by zero is not allowed.
2 + 2
CLIENT RECEIVED: 4.0
2 / 2
CLIENT RECEIVED: 1.0
2 - 3
CLIENT RECEIVED: -1.0
2 + fgh
Error: Please enter valid numbers for the arithmetic operation.
q

PS C:\Users\vaibhav\Desktop\coding\.vscode> python .\server1.py
Server started...waiting for a connection from the client
Connection initiated from ('10.196.48.4', 59558)
SERVER RECEIVED: Vaibhav Gupta
SERVER RECEIVED: 3 * 3
SERVER RECEIVED: 2 + 2
SERVER RECEIVED: 2 / 2
SERVER RECEIVED: 2 - 3
SERVER RECEIVED: q
PS C:\Users\vaibhav\Desktop\coding\.vscode> |
```

Q7)

Stateful Protocol:

In a stateful protocol, the current state of the communication is remembered by the receiving party. Sequence and context of messages matter.

Stateless Protocol:

In a stateless protocol, each message is independent and not related to previous or future messages. There is no knowledge of past or future communication states.

- A) Yes
- B) No
- C) No
- D) Yes

Q8)

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<pre>Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved. Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows PS C:\Users\vaibhav> cd downloads PS C:\Users\vaibhav\downloads> python .\clientQ8.py Enter login name: > Rupesh Bhusare Server: time=14:50 Rupesh Bhusare has joined. Member count=2 > Server: time=14:50 Naruto Uzumaki has joined. Member count=3 Vaibhav Gupta: Hello Hello Vaibhav > Rupesh Bhusare: Hello Vaibhav Naruto Uzumaki: Hello Everybody Vaibhav Gupta: Who are you I think he is Hokage of leaf village Rupesh Bhusare: I think he is Hokage of leaf village > Naruto Uzumaki: Dattebayo</pre>	<pre>Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved. Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows PS C:\Users\vaibhav> cd downloads PS C:\Users\vaibhav\downloads> python .\clientQ8.py Enter login name: > Naruto Uzumaki Server: time=14:50 Naruto Uzumaki has joined. Member count=3 > Vaibhav Gupta: Hello Rupesh Bhusare: Hello Vaibhav Hello Everybody > Naruto Uzumaki: Hello Everybody Vaibhav Gupta: Who are you Rupesh Bhusare: I think he is Hokage of leaf village Dattebayo Naruto Uzumaki: Dattebayo ></pre>