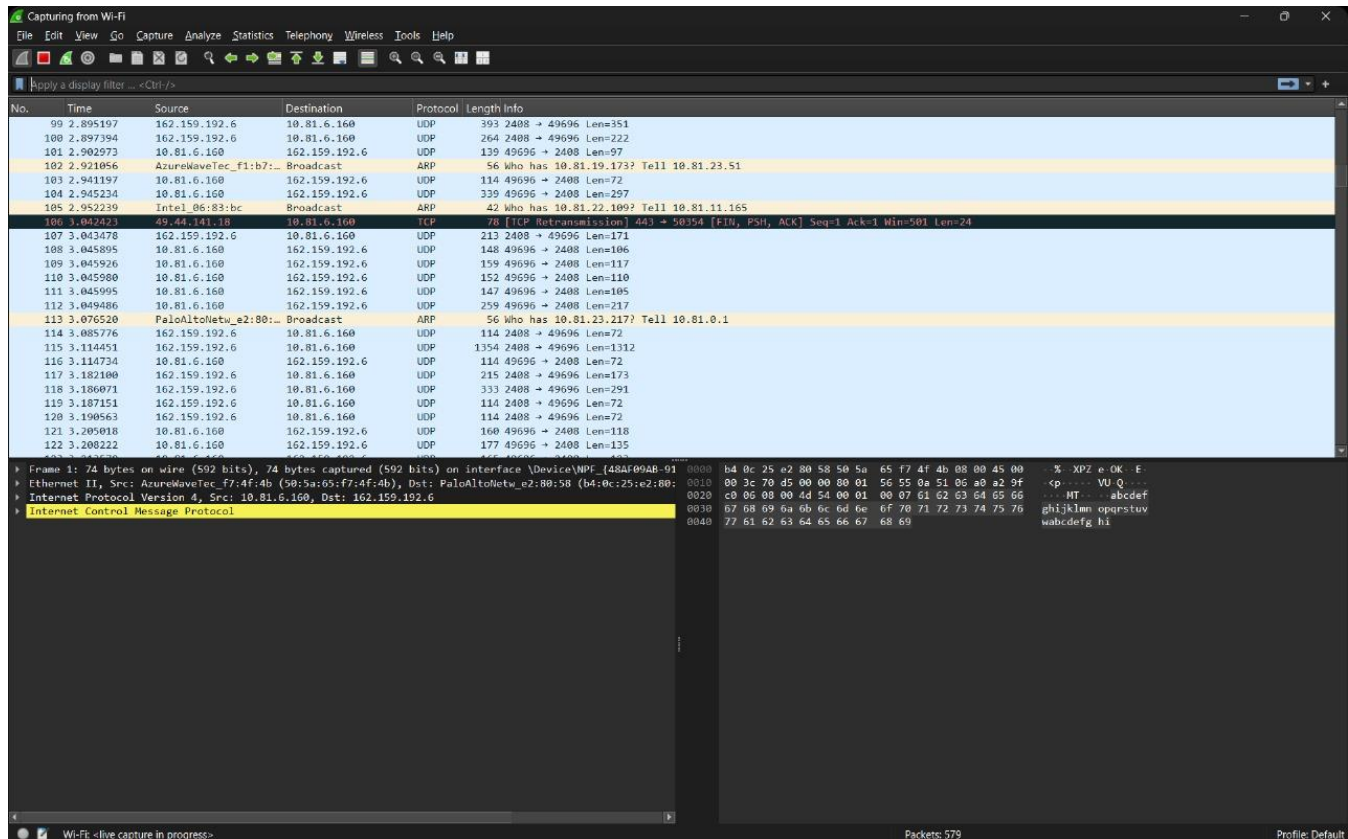

 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering and Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Computer Networks (01CT0503)</b>	<b>Aim: Monitor the live/real time network and analyze the concepts of various networking protocols like IP, TCP, UDP, etc.</b>	
<b>Experiment No: 11</b>	<b>Date:</b>	<b>Enrolment No: 92200133021</b>

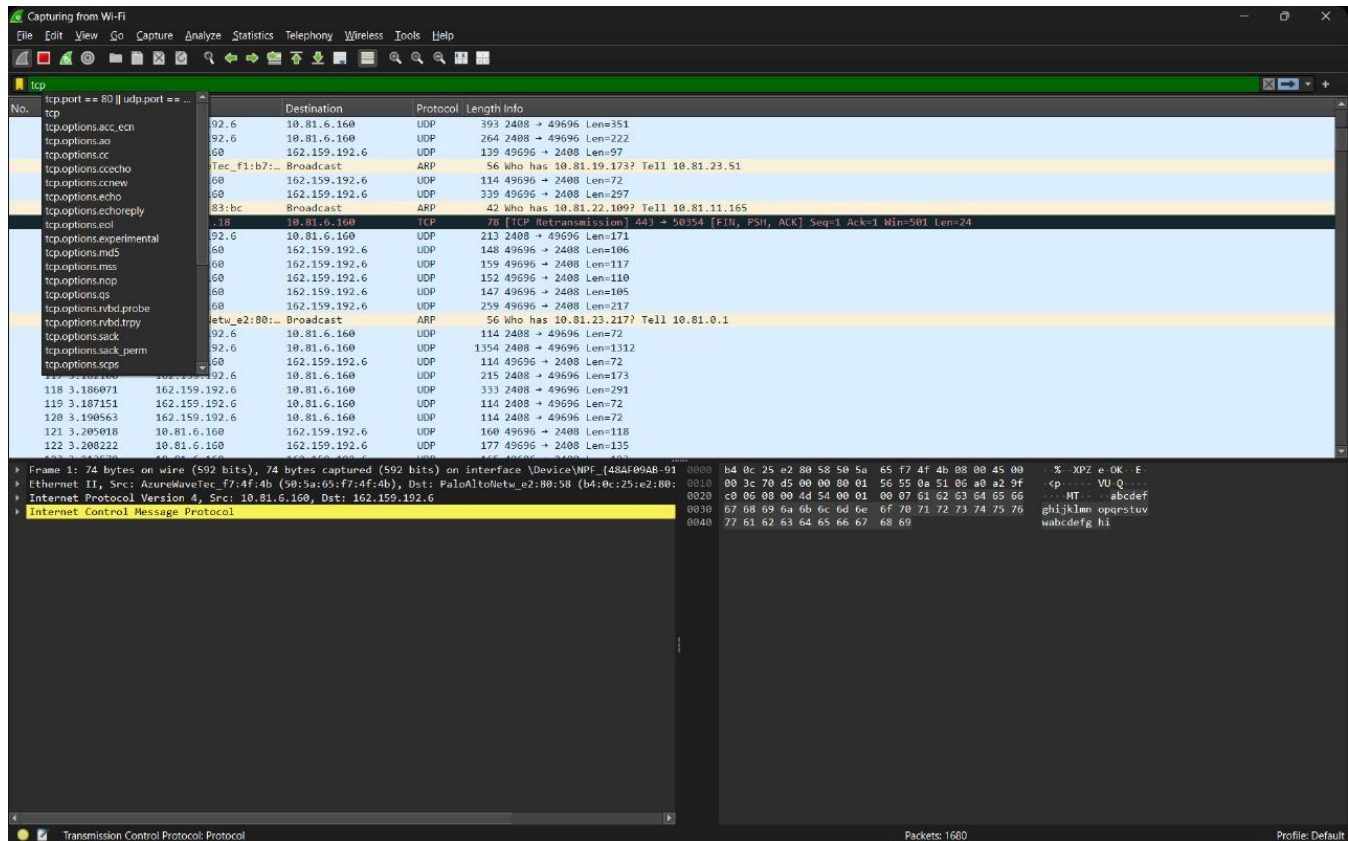
**Aim:** Monitor the live/real time network and analyze the concepts of various networking protocols like IP, TCP, UDP, etc.



Firstly open wireshark and select any Wi-Fi by which you will capture all the data packets in the pc.

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filter search tcp protocol and observe.



filter udp protocol and observe.

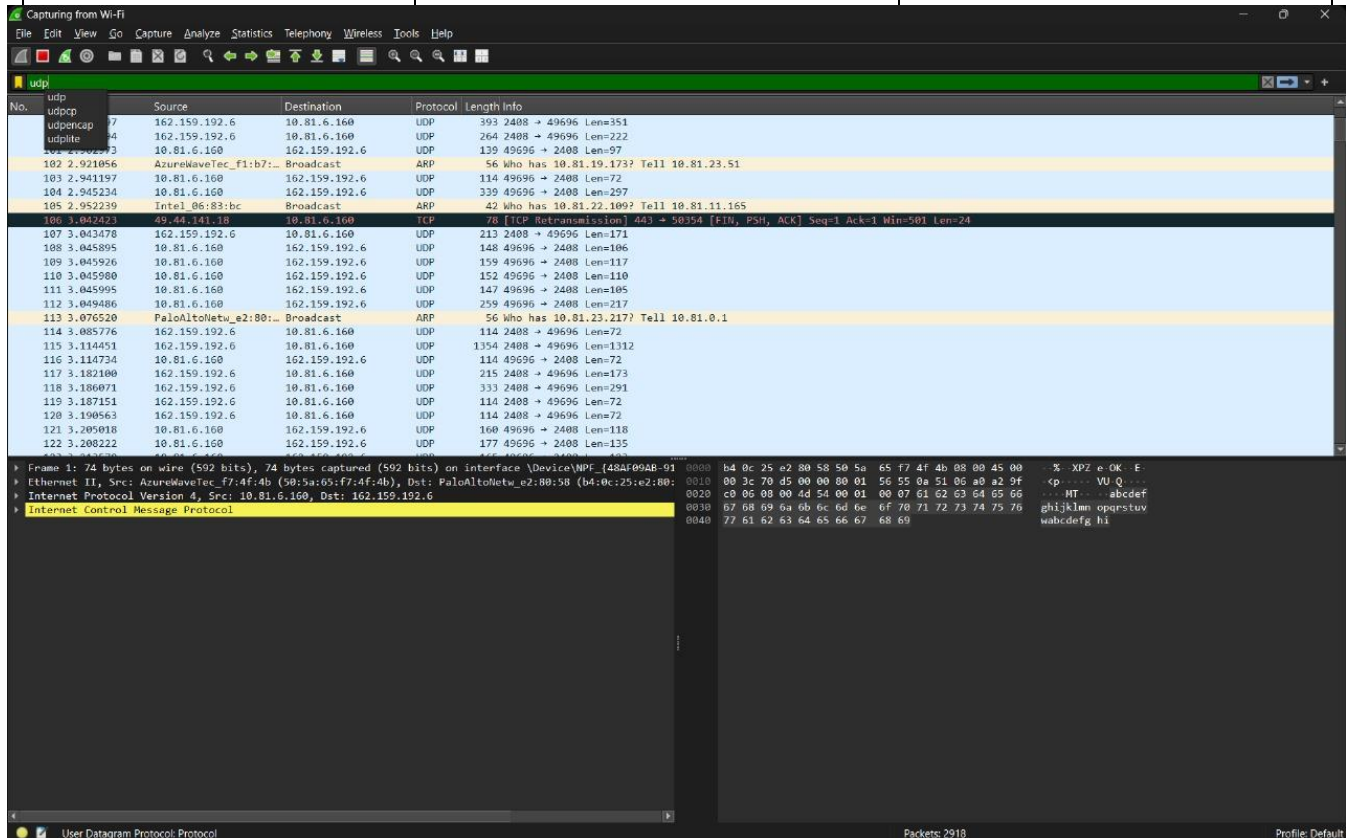
**Subject: Computer Networks (01CT0503)**

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**Date:**

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The screenshot shows the Wireshark interface with a packet capture from a Wi-Fi interface. The packet list on the left shows various UDP and ARP packets. The packet details pane on the right shows the structure of a selected packet, including Ethernet II, Internet Protocol Version 4, and Internet Control Message Protocol (ICMP). The packet bytes pane at the bottom shows the raw data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
102	2.921056	AzureWaveTec_f1:b7...	Broadcast	ARP	56	Who has 10.81.19.173? Tell 10.81.23.51
103	2.941197	10.81.6.160	162.159.192.6	UDP	114	49696 → 2408 Len=72
104	2.945234	10.81.6.160	162.159.192.6	UDP	339	49696 → 2408 Len=297
105	2.952239	Intel_06:83:bc	Broadcast	ARP	42	Who has 10.81.22.109? Tell 10.81.11.165
106	3.042423	49.44.141.18	10.81.6.160	TCP	78	[TCP Retransmission] 443 → 50354 [FIN, PUSH, ACK] Seq=1 Ack=1 Win=501 Len=24
107	3.043478	162.159.192.6	10.81.6.160	UDP	213	2408 → 49696 Len=171
108	3.045895	10.81.6.160	162.159.192.6	UDP	148	49696 → 2408 Len=106
109	3.045926	10.81.6.160	162.159.192.6	UDP	159	49696 → 2408 Len=117
110	3.045980	10.81.6.160	162.159.192.6	UDP	152	49696 → 2408 Len=110
111	3.045995	10.81.6.160	162.159.192.6	UDP	147	49696 → 2408 Len=105
112	3.049486	10.81.6.160	162.159.192.6	UDP	259	49696 → 2408 Len=217
113	3.076520	PaloAltoNetw_e2:80:...	Broadcast	ARP	56	Who has 10.81.23.217? Tell 10.81.0.1
114	3.085776	162.159.192.6	10.81.6.160	UDP	114	2408 → 49696 Len=72
115	3.114451	162.159.192.6	10.81.6.160	UDP	1354	2408 → 49696 Len=1312
116	3.114734	10.81.6.160	162.159.192.6	UDP	114	49696 → 2408 Len=72
117	3.182100	162.159.192.6	10.81.6.160	UDP	215	2408 → 49696 Len=173
118	3.186071	162.159.192.6	10.81.6.160	UDP	333	2408 → 49696 Len=291
119	3.187151	162.159.192.6	10.81.6.160	UDP	114	2408 → 49696 Len=72
120	3.190563	162.159.192.6	10.81.6.160	UDP	114	2408 → 49696 Len=72
121	3.205018	10.81.6.160	162.159.192.6	UDP	160	49696 → 2408 Len=118
122	3.208222	10.81.6.160	162.159.192.6	UDP	177	49696 → 2408 Len=135

Frame 1: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface \Device\NPF\_{48A509AB-91...}

Ethernet II, Src: AzureWaveTec\_f7:4f:4b (50:5a:65:f7:4f:4b), Dst: PaloAltoNetw\_e2:80:58 (b4:0c:25:e2:80:58)

Internet Protocol Version 4, Src: 10.81.6.160, Dst: 162.159.192.6

Internet Control Message Protocol

User Datagram Protocol: Protocol

Packets: 2918

Profile: Default

open command prompt and give any website address and provide that ip address in wireshark to filter out that website.



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Wireshark packet capture showing ICMP Echo (ping) requests and replies between 10.81.6.160 and 172.64.155.209. The capture shows a series of successful ping requests and replies, with the destination IP address 172.64.155.209 highlighted in the packet list.

Below the packet capture, a Windows Command Prompt window shows the execution of the command `C:\Users\surya>ping chatgpt.com`. The output displays the ping statistics for 172.64.155.209, showing 4 packets sent, 4 received, and 0% loss, with a minimum round trip time of 12ms and a maximum of 17ms.


```
Microsoft Windows [Version 10.0.22631.4460]
(c) Microsoft Corporation. All rights reserved.

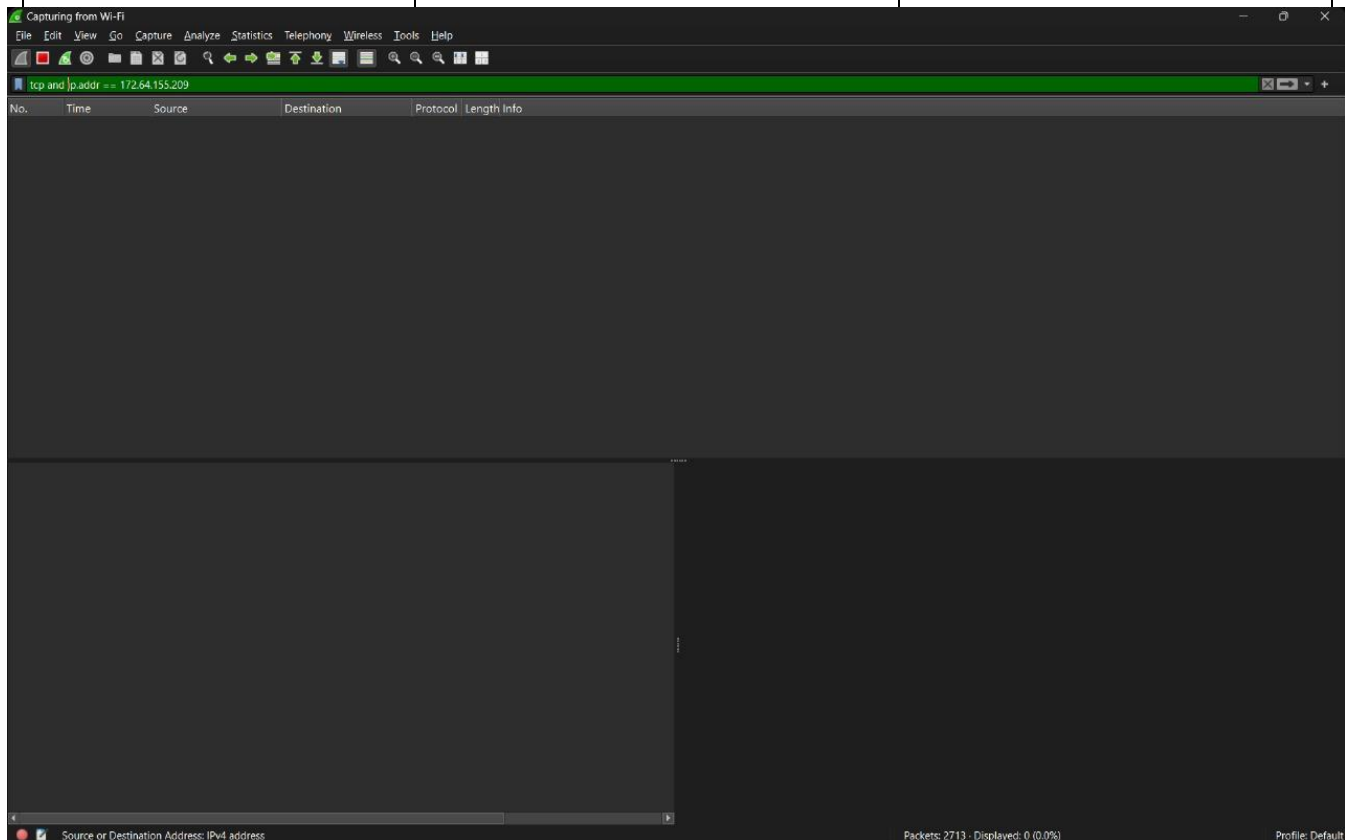
C:\Users\surya>ping chatgpt.com

Pinging chatgpt.com [172.64.155.209] with 32 bytes of data:
Reply from 172.64.155.209: bytes=32 time=12ms TTL=55
Reply from 172.64.155.209: bytes=32 time=12ms TTL=55
Reply from 172.64.155.209: bytes=32 time=12ms TTL=55
Reply from 172.64.155.209: bytes=32 time=17ms TTL=60

Ping statistics for 172.64.155.209:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 17ms, Average = 13ms

C:\Users\surya>
```

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This concludes that website does not have tcp protocol.

## Conclusion:

During my experiment monitoring live network traffic with Wireshark, I explored various protocols and learned all their functionalities. TCP ensures reliable communication by establishing connections and confirming data delivery, Unlike TCP, UDP does not establish a connection or verify data delivery. Instead, it sends packets, called datagrams, directly to the recipient without waiting for acknowledgments or retransmissions. Observing IP packets highlighted how data efficiently navigates networks to reach its destination. Also, I discovered that ChatGPT doesn't use TCP but relies on protocols optimized for speed and scalability, which fits its need to handle large amounts of data quickly and efficiently.