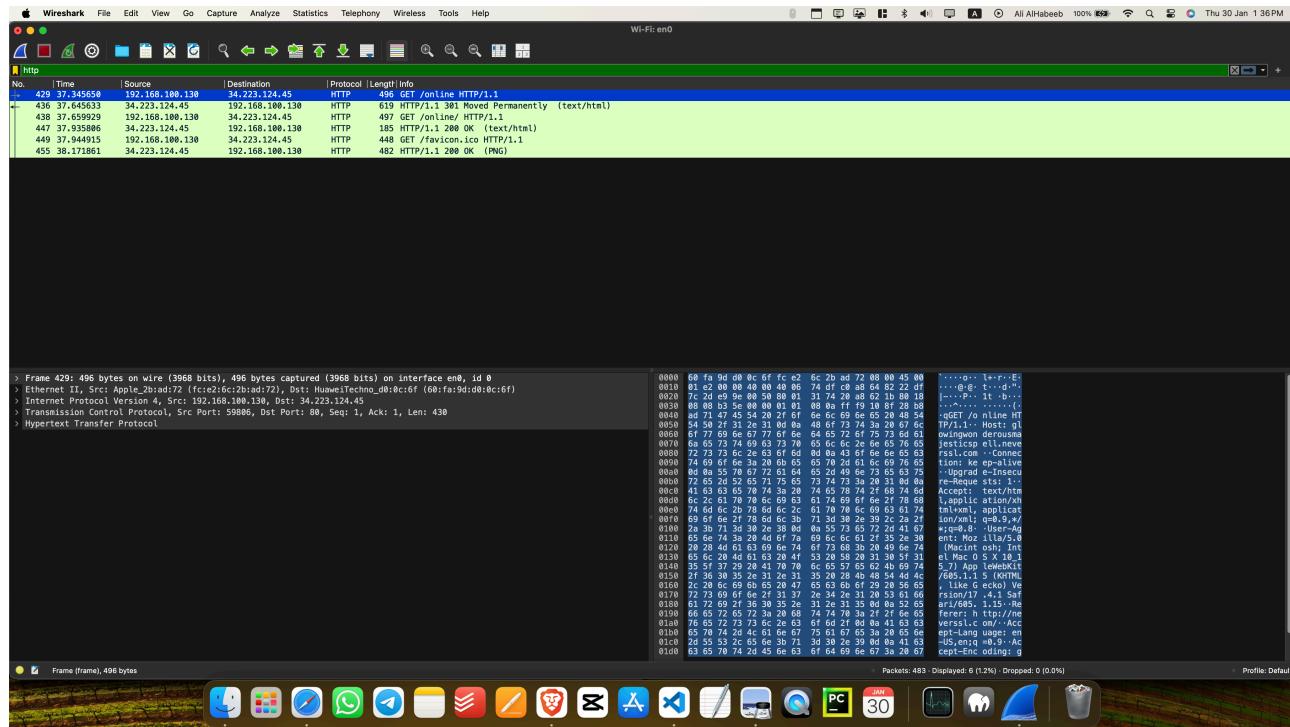
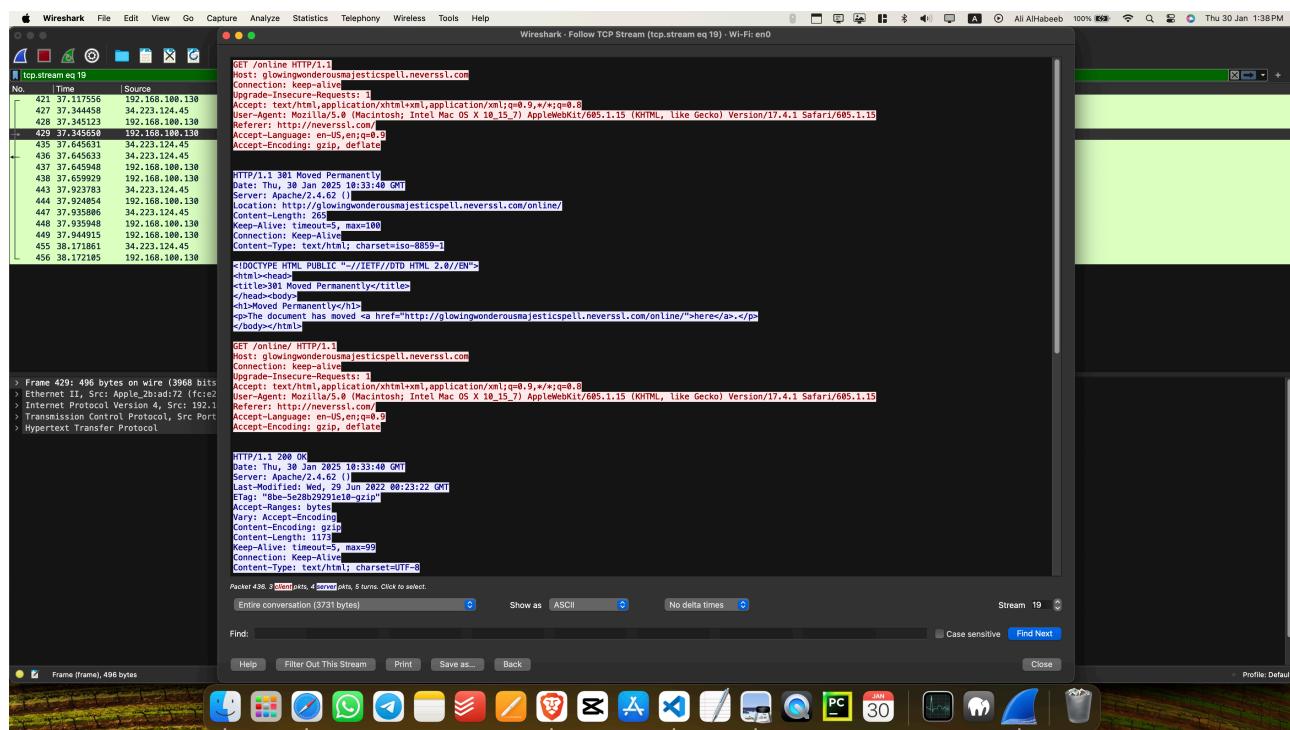


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part 1:



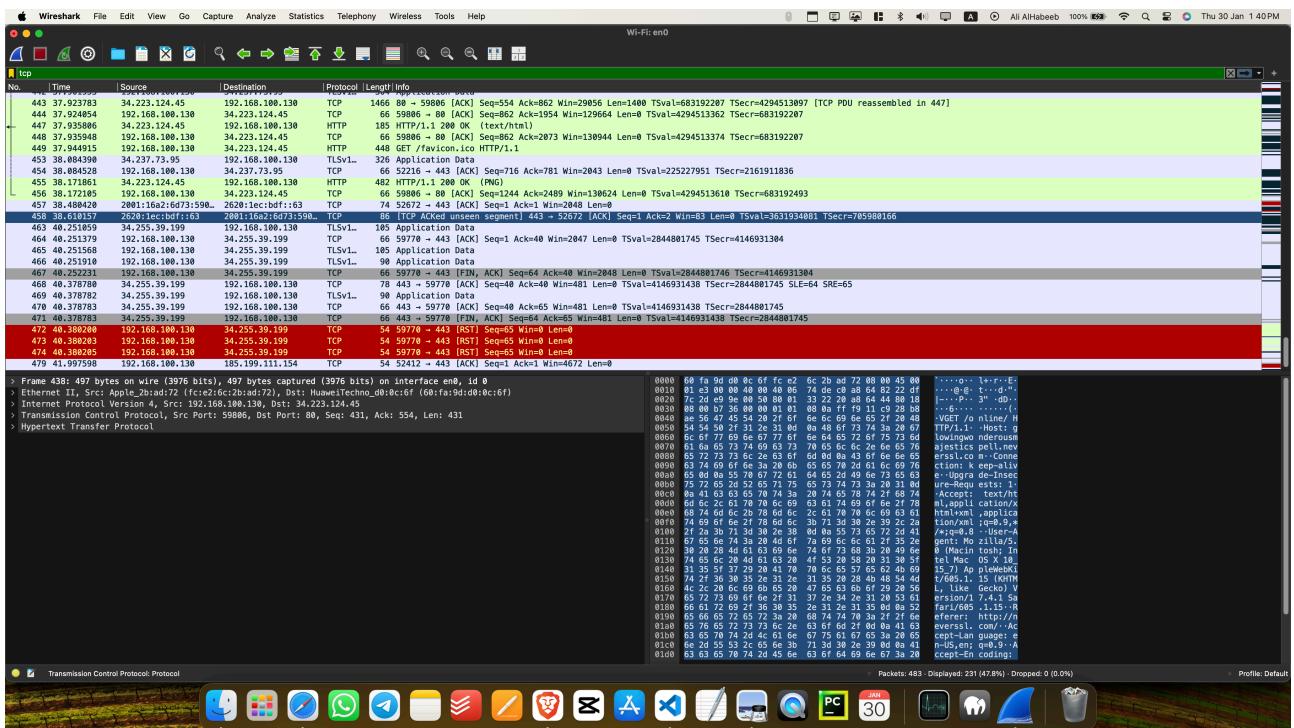
part 2: you see here this is the tcp packets



this is the tcp handshake :

421	37.117556	192.168.100.130	34.223.124.45	TCP	78	59806 - 80	[SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=64 TSval=4294512555 TSeср=0 SACK_PERM
427	37.344458	34.223.124.45	192.168.100.130	TCP	74	80 - 59806	[SYN, ACK] Seq=1 Win=65535 Len=0 MSS=1412 SACK_PERM TSval=683191665 TSeср=4294512555 WS=128
428	37.345123	192.168.100.130	34.223.124.45	TCP	66	59806 - 80	[ACK] Seq=1 Win=131584 Len=0 TSval=4294512782 TSeср=683191665

here is the data packets exchange and termination process :



471 40_378783 34_255_39_199 192_168_100_130 TCP 66 443 - 59770 [FTN, ACK] Seq=64 Ack=65 Win=481 Len=0 TSval=4146931438 Tsecr=284801745

part 3:

```

333. 36.806691 2a00:1450:4b06:80e.. 2001:16a2:6d73:590.. UDP 294 443 - 54361 Len=232
333. 36.807546 2001:16a2:6d73:590.. 2a00:1450:4b06:80e.. UDP 96 54361 - 424 Len=34
333. 36.807085 2001:16a2:6d73:590.. 2a00:1450:4b06:80e.. UDP 188 54361 - 443 Len=38

> Frame 33807: 294 bytes on wire (2352 bits), 294 bytes captured (2352 bits) on interface en0, id 0
> Ethernet II Src: Ausweitechno_00:0c:0f (00:0c:0d:00:0c:0f), Dst: Apple_20:ad:72 (fc:ee:8c:2b:ad:72)
> Internet Protocol Version 4, Src: 2a00:1450:4b06:80e::208a, Dst: 2001:16a2:6d73:5900:50b4:3767:c93c:92cb
> User Datagram Protocol, Src Port: 424, Dst Port: 54361
> Data (232 bytes):
0080  4c 2c 6c 2b 7d 72 5b fa 90 00 00 00 00 00 00 00 |l+-r-----|...-c-|
0081  00 00 00 19 11 2b 2b 00 14 59 40 00 00 00 00 00 |+-r-----|...-p-|
0082  00 00 00 00 28 00 28 01 16 2a 6d 73 50 00 00 05 |.....-msy-|...-R-|
0083  02 78 43 9c 92 c9 bb d4 59 00 19 77 0d 52 6d 00 |x-----|...-Y-|...-R-|
0084  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |.....-msy-|...-R-|
0085  94 e9 9d 92 a2 3d 7e 01 7b 56 63 67 3d 03 b9 7b |.....-W-|...-Vcom-{|
0086  e9 ed 2d 43 a1 f1 01 16 94 cc 58 2b 19 35 66 00 |.....-L-|...-I-|...-G-|
0087  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |.....-Lb-t-|...-I-|...-G-|
0088  00 37 70 7a 1f 1e 66 78 7e 88 89 52 4e ac 28 24 |17-----|...-RN-|$|
0089  14 5c 76 3f 97 09 72 9b 2b 71 e4 38 90 00 c0 00 |{.----|...+0|-0|...-|
0090  36 11 ca 33 5b 00 00 00 00 00 00 00 00 00 00 00 |0-----|...-S-|...-T-|...-|
0091  06 11 ca 33 5b a9 88 ff 2d 24 88 54 80 d0 ca 30 |0-----|...-S-|...-T-|...-|
0092  27 f0 61 5b 3e 34 6d a7 d5 f7 69 6a f1 b1 be ee |0-----|...-i4m-|...-j1-|...-|
0093  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |0-----|...-S-|...-T-|...-|
0094  35 9b 6d 4f 73 03 3b 3d 88 6c ec 9d bb fe 5d b4 |5-Ms---|...-l1-|...-l1-|
0095  ab 88 bc 19 3e 6a d5 1f 73 f9 56 dd ee 22 2f 3a |...-zj-|...-s-P-|"-v-|
0100  92 9f 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |0-----|...-Ck-|...-p-|...-|
0111  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |0-----|...-Ck-|...-p-|...-|
0112  19 59 47 00 50 0f 28 65 78 61 71 14 99 00 03 |9-Y-|...-qW-|...-|
0128  f8 5d 68 41 ac b2 |)h\..
```

you see here the header file and the packet size for UDP is much smaller than TCP.

part 4 :

	TCP or UDP	Reasons
Reliability and Connection Establishment	TCP	TCP is connection-oriented, using a three-way handshake (SYN, SYN-ACK, ACK) to establish a connection. It ensures reliability through acknowledgments and retransmissions of lost packets.
Data Integrity and Ordering	TCP	TCP guarantees both data integrity (via checksums) and ordered delivery (via sequence numbers). UDP provides optional checksums for integrity but does not ensure packet ordering.

	TCP	UDP
Use cases	Applications requiring reliable delivery: web browsing (HTTP), email (SMTP), file transfers (FTP).	Real-time applications: video streaming, VoIP, online gaming, live broadcasts (where speed is prioritized over reliability).
Performance	Slower due to connection setup, acknowledgments, and congestion control. Higher reliability but increased latency.	Faster with minimal overhead. Lower latency but no reliability guarantees, making it suitable for time-sensitive transmissions.