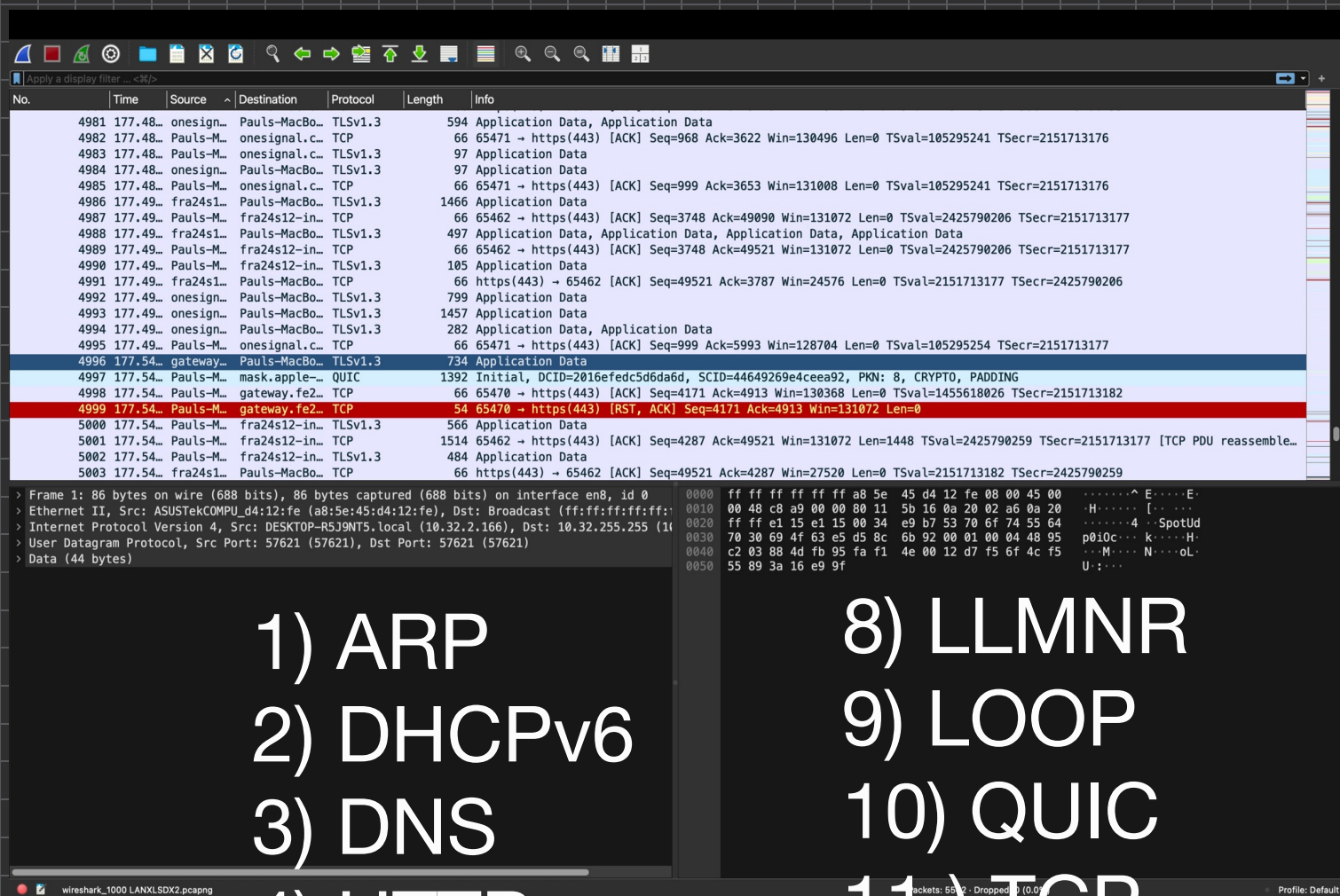


1. (1p) Folosiți Wireshark pentru a obține o trasă de minim 5000 linii (puteți folosi orice site doriți)
2. (1p) Identificați minim 5 protocoale transmise în trasa voastră



1) ARP

2) DHCPv6

3) DNS

4) HTTP

5) ICMPv6

6) IGMPv3

7) LLC

8) LLMNR

9) LOOP

10) QUIC

11) TCP

12) UDP

13) TLSv1.3

14) XID

3. (1p) Care este timpul de achiziție pentru cadrul cu numărul  
(numarul\_de\_litere\_din\_nume)\*numarul\_grupeii\*numarul\_subgrupeii\*10

Ex: Misici – 6 litere

$$7 * 2 * 1 * 10 = 140$$

Grupa 3

Subgrupa 2

138	8.7819...	85.41.1...	172.20.10.14	TCP
139	8.8551...	172.67....	172.20.10.14	TLSv1.2
140	8.8553...	172.20....	172.67.73.1...	TCP
141	9.1984...	172.67....	172.20.10.14	TLSv1.2
142	9.1984...	85.41.1...	172.20.10.14	TLSv1.2

8.8553

⇒ Cadrul numărul:  $6 * 3 * 2 * 10 = 360$

4. (1p) Pentru cadrul cu numărul

$$4 * 2 * 1 * 10 = 80$$

(numarul\_de\_litere\_din\_prenume)\*numarul\_grupe\_i\*numarul\_subgrupe\_i\*10

Spuneți care este volumul de date captat de wireshark

```
▼ Frame 80: 468 bytes on wire (3744 bits), 468 bytes captured (3744 bits) on interface en8, id 0
  Section number: 1
  > Interface id: 0 (en8)
    Encapsulation type: Ethernet (1)
    Arrival Time: Nov 12, 2024 18:02:36.940419000 EET
    UTC Arrival Time: Nov 12, 2024 16:02:36.940419000 UTC
    Epoch Arrival Time: 1731427356.940419000
    [Time shift for this packet: 0.000000000 seconds]
    [Time delta from previous captured frame: 0.000255000 seconds]
    [Time delta from previous displayed frame: 0.000255000 seconds]
    [Time since reference or first frame: 3.152043000 seconds]
    Frame Number: 80
    Frame Length: 468 bytes (3744 bits)
    Capture Length: 468 bytes (3744 bits)
    [Frame is marked: False]
    [Frame is ignored: False]
    [Protocols in frame: eth:ethertype:ip:udp:ssdp]
    [Coloring Rule Name: UDP]
    [Coloring Rule String: udp]
  ▼ Ethernet II, Src: TPLink_e3:b3:bc (34:60:f9:e3:b3:bc), Dst: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)
    > Destination: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)
    > Source: TPLink_e3:b3:bc (34:60:f9:e3:b3:bc)
    Type: IPv4 (0x0800)
    [Stream index: 0]
  ▼ Internet Protocol Version 4, Src: 192.168.0.1 (192.168.0.1), Dst: 239.255.255.250 (239.255.255.250)
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 454
    Identification: 0x0000 (0)
    > 010. .... = Flags: 0x2, Don't fragment
    ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 4
    Protocol: UDP (17)
    Header Checksum: 0xc483 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.0.1 (192.168.0.1)
    <Source or Destination Address: 192.168.0.1 (192.168.0.1)>
    <[Source Host: 192.168.0.1]>
    <[Source or Destination Host: 192.168.0.1]>
    Destination Address: 239.255.255.250 (239.255.255.250)
    <Source or Destination Address: 239.255.255.250 (239.255.255.250)>
    <[Destination Host: 239.255.255.250]>
    <[Source or Destination Host: 239.255.255.250]>
    [Stream index: 5]
  > User Datagram Protocol, Src Port: 36126 (36126), Dst Port: ssdp (1900)
```

468 bytes  
3744 bits

6. (3p) Desenați formele de undă pentru codurile RZ, NRZ-I (Inverted) și Manchester pentru primii 10 biți rezultați de la punctul 5.

No.: 80 · Time: 3.152043 · Source: 192.168.0.1 · Destination: 239.255.255.250 · Protocol: SSDP · Length: 468 · Info: NOTIFY \* HTTP/1.1

☒ Show packet bytes    Layout: Vertical (Stacked)

Help

Close

5. (2p) Converteți 4b/5b prenumele vostru (cel de-al 2-lea în caz că aveți mai multe) folosindu-vă de convertorul ASCII-to-Binary din laborator.

Binar	Codul 4b/5b
0000	11110
0001	01001
0010	10100
0011	10101
0100	01010
0101	01011
0110	01110
0111	01111
1000	10010
1001	10011
1010	10110
1011	10111
1100	11010
1101	11011
1110	11100
1111	11101

Char -> Binary -> 4b/5b Conversion

P -> 0101 0000 -> 01011 11110

a -> 0110 0001 -> 01110 01001

u -> 0111 0101 -> 01111 01011

l -> 0110 1100 -> 01110 11010

6. (3p) Desenați formele de undă pentru codurile RZ, NRZ-I (Inverted) și Manchester pentru primii 10 biți rezultați de la punctul 5.

