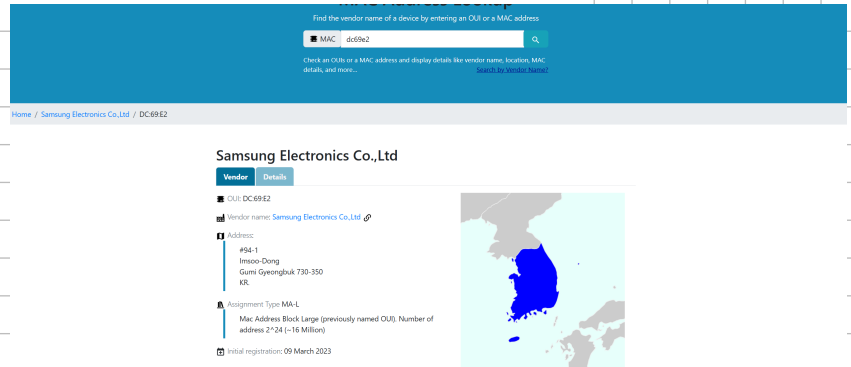
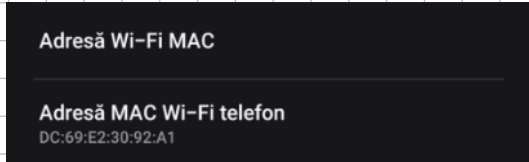
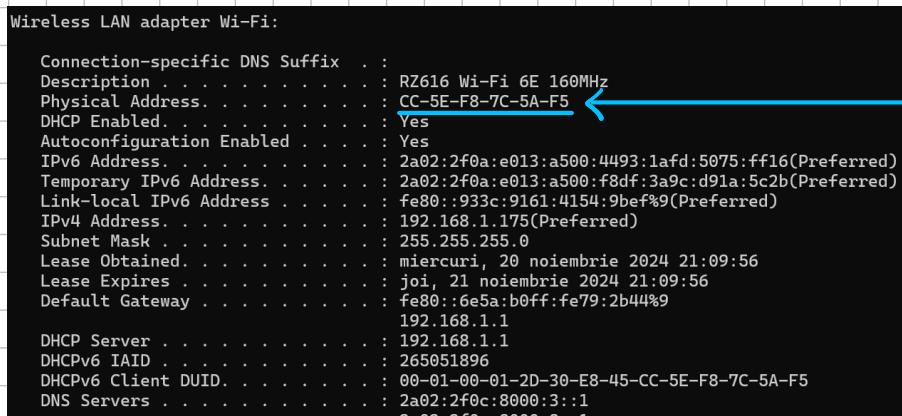


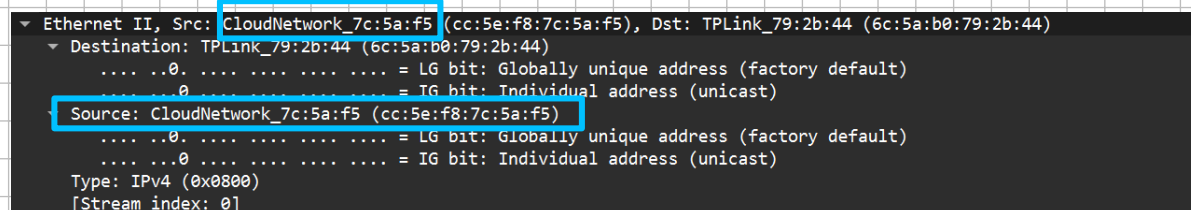
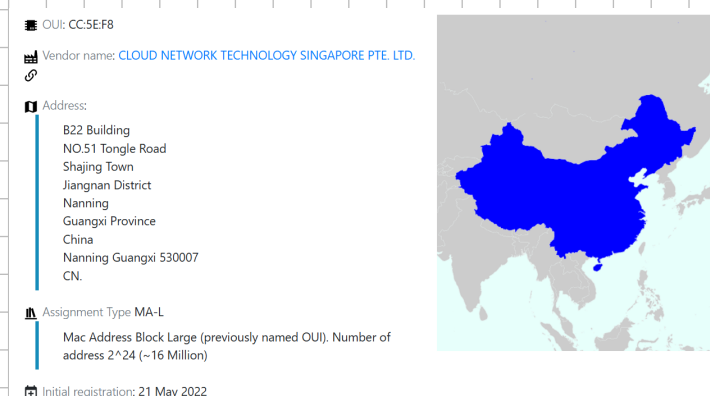
1. Identificați adresa MAC a telefonului vostru mobil. Care este producătorul plăcii de rețea pentru mobilul d-voastră?



2. Care este adresa MAC a PC-ului vostru? (pentru a rezolva aceasta cerință puteți găsi ajutor în CV)



3. Care este producătorul plăcii voastre de rețea conform site-ului menționat în laborator (atenție CV)? Dar conform Wireshark?



4. Care este codul ce ne definește partea de OUI pentru adresa obținută de pe telefon?

bc : 69 : E2 : 30 : 92 : A1

5. Care este codul individual pentru placa de rețea aferentă PC-ului vostru?

CC : 5E : F8 : 7C : 5A : F5

Codul individual al plăcii de rețea este reprezentat de ultimele 6 cifre ale adresei MAC.

6. Care sunt primele 5 intrări ale tabelului voastre de ARP?

Interface: 192.168.1.175 --- 0x9		
Internet Address	Physical Address	Type
192.168.1.1	6c-5a-b0-79-2b-44	dynamic
192.168.1.255	ff-ff-ff-ff-ff-ff	static
224.0.0.2	01-00-5e-00-00-02	static
224.0.0.22	01-00-5e-00-00-16	static
224.0.0.251	01-00-5e-00-00-fb	static

7. Pornind de la o trasă wireshark completați următoarea diagramă pentru cadrul cu numărul :

(Nr\_grupa+nr\_litere\_nume)\*nr\_subgrupă+nr\_litere\_prenume

MAC dest	MAC src	IP scr	IP dest	Antet transport	Date
				Antet transport	Date

ATENȚIE: câmpurile gata completate, rămân așa (le vom completa cu alte ocazii).

$$\begin{matrix} (1+7) \cdot 2 + 5 = 16+5 = 21 \\ \text{src} \quad \text{dst} \end{matrix}$$

20 0.047760	66.22.244.11	192.168.1.175	UDP	245 50001 → 51982 Len=203
21 0.049605	192.168.1.175	66.22.244.14	UDP	93 51983 → 50007 Len=51
22 0.057067	192.168.1.175	66.22.244.14	UDP	1234 51983 → 50007 Len=1192
23 0.057113	192.168.1.175	66.22.244.14	UDP	1234 51983 → 50007 Len=1192
24 0.057126	192.168.1.175	66.22.244.14	UDP	1234 51983 → 50007 Len=1192
25 0.057136	192.168.1.175	66.22.244.14	UDP	1234 51983 → 50007 Len=1192
26 0.061731	192.168.1.175	66.22.244.14	UDP	1234 51983 → 50007 Len=1192
27 0.062146	192.168.1.175	66.22.244.14	UDP	198 51983 → 50007 Len=156
28 0.065547	66.22.244.11	192.168.1.175	UDP	258 50001 → 51982 Len=216
29 0.081840	192.168.1.175	66.22.244.14	UDP	205 51983 → 50007 Len=163
30 0.082159	192.168.1.175	66.22.244.14	UDP	1217 51983 → 50007 Len=1175
31 0.086629	192.168.1.175	66.22.244.14	RTCP	102 Sender Report
32 0.087060	66.22.244.11	192.168.1.175	UDP	269 50001 → 51982 Len=227
33 0.101678	192.168.1.175	66.22.244.14	UDP	200 51983 → 50007 Len=158
34 0.106920	66.22.244.11	192.168.1.175	UDP	269 50001 → 51982 Len=227
35 0.115735	192.168.1.175	66.22.244.14	UDP	1133 51983 → 50007 Len=1091

▶ Frame 21: 93 bytes on wire (744 bits), 93 bytes captured (744 bits) on interface \Device\NPF\_{6BE0BB53-43DC-4EAE-BA9...}

▶ Ethernet II, Src: CloudNetwork\_7c:5a:f5 (cc:5e:f8:7c:5a:f5), Dst: TPLink\_79:2b:44 (6c:5a:b0:79:2b:44)

▶ Internet Protocol Version 4, Src: 192.168.1.175, Dst: 66.22.244.14

▶ User Datagram Protocol, Src Port: 51983, Dst Port: 50007

▶ Data (51 bytes)

1.2.

CIOBANU

BARIA

MAC dest	MAC src	IP src	IP dest
6C : 5A : B0 : 79 : 2B : 44	CC : 5E : F8 : 7C : 5A : F5	192.168.1.175	66.22.244.14

8 Care este ordinea adreselor, asa cum rezultă ele din wireshark, pentru cadrul cu numărul

(Data\_in\_care\_a-ti\_realizat\_tema)+nr\_litere\_prenume

Ex: Data\_în\_care\_a-ți\_realizat\_tema=dată+lună+an

ATENȚIE: discutăm despre 2 tipuri de adrese, se vede frumos în partea hexazecimală

$$(13 + 11 + 2024) + 5 = 2053$$

```
> Frame 2853: 1219 bytes on wire (9752 bits), 1219 bytes captured (9752 bits) on interface \Device\NPF_{6E08B853-43DC-0000-8C5A-B0792B44} cc 5e f8 7c 5a f5 08 00 45 00 12-yd-0-2-0-E
> Ethernet II, Src: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5), Dst: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
  Destination: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Source: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
  [Stream index: 0]
> Internet Protocol Version 4, Src: 192.168.1.175, Dst: 66.22.244.14
> User Datagram Protocol, Src Port: 51983, Dst Port: 50007
> Data (1177 bytes)
```

→ primele 6 grupări: adresă MAC dst

```
> Frame 2853: 1219 bytes on wire (9752 bits), 1219 bytes captured (9752 bits) on interface \Device\NPF_{6E08B853-43DC-0000-8C5A-B0792B44} cc 5e f8 7c 5a f5 08 00 45 00 12-yd-0-2-0-E
> Ethernet II, Src: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5), Dst: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
  Destination: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Source: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
  [Stream index: 0]
> Internet Protocol Version 4, Src: 192.168.1.175, Dst: 66.22.244.14
> User Datagram Protocol, Src Port: 51983, Dst Port: 50007
> Data (1177 bytes)
```

→ următoarele 6 : adresă MAC src

```
> Frame 2853: 1219 bytes on wire (9752 bits), 1219 bytes captured (9752 bits) on interface \Device\NPF_{6E08B853-43DC-0000-8C5A-B0792B44} cc 5e f8 7c 5a f5 08 00 45 00 12-yd-0-2-0-E
> Ethernet II, Src: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5), Dst: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
  Destination: TPLink_79:2b:44 (6c:5a:b0:79:2b:44)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Source: CloudNetwork_7c:5a:f5 (cc:5e:f8:7c:5a:f5)
    ....0..... = IG bit: Globally unique address (factory default)
    ....0..... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
  [Stream index: 0]
> Internet Protocol Version 4, Src: 192.168.1.175, Dst: 66.22.244.14
> User Datagram Protocol, Src Port: 51983, Dst Port: 50007
> Data (1177 bytes)
```

→ următoarele 2 : IPV4

9. Pentru un dispozitiv de Windows, care este diferența dintre comenzile

a. Ipconfig

b. Ipconfig /all

```
C:\Users\daria>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:

   Connection-specific DNS Suffix  . : 
   Link-local IPv6 Address . . . . . : fe80::e80d:72fd:a549:573b14
   IPv4 Address. . . . . : 192.168.56.1
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : 

Wireless LAN adapter Conexiune de rețea Locală* 9:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 

Wireless LAN adapter Conexiune de rețea Locală* 10:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . : 
   IPv6 Address. . . . . : 2a02:2f0a:e013:a500:4493:1afd:5075:ff16
   Temporary IPv6 Address . . . . . : 2a02:2f0a:e013:a500:f8df:3a9c:d91a:5c2b
   Link-local IPv6 Address . . . . . : fe80::933c:9161:4154:0baf9
   IPv4 Address. . . . . : 192.168.1.175
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : fe80::6e5a:b0ff:fe79:2b4449
   192.168.1.1

Ethernet adapter Conexiune de rețea Bluetooth:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 

Ethernet adapter vEthernet (Default Switch):

   Connection-specific DNS Suffix  . : 
   Link-local IPv6 Address . . . . . : fe80::8149:5513:b175:35e940
   IPv4 Address. . . . . : 192.168.160.1
   Subnet Mask . . . . . : 255.255.240.0
   Default Gateway . . . . . :
```

```
C:\Users\daria>ipconfig /all

Windows IP Configuration

Host Name . . . . . : Daria6Aphb8
Primary Dns Suffix . . . . . : 
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet 2:

   Connection-specific DNS Suffix  . : 
   Description . . . . . : VirtualBox Host-Only Ethernet Adapter
   Physical Address. . . . . : 0A-00-27-00-00-0E
   DHCP Enabled. . . . . : No
   Autoconfiguration Enabled . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::e80d:72fd:a549:573b14(Preferred)
   IPv6 Address. . . . . : 192.168.56.1(Preferred)
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : 
   DHCPv6 IAID . . . . . : 118095911
   DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-30-E8-45-CC-5E-F8-7C-5A-F5
   NetBIOS over Tcpip. . . . . : Enabled

Wireless LAN adapter Conexiune de rețea Locală* 9:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 
   Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
   Physical Address. . . . . : CE-5E-F8-7C-7A-D5
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . : Yes

Wireless LAN adapter Conexiune de rețea Locală* 10:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 
   Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
   Physical Address. . . . . : CE-5E-F8-7C-6A-C5
   DHCP Enabled. . . . . : No
   Autoconfiguration Enabled . . . : Yes
```

```
Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . : 
   Description . . . . . : RZ616 Wi-Fi 6E 160MHz
   Physical Address. . . . . : CC-5E-F8-7C-5A-F5
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . : Yes
   IPv6 Address. . . . . : 2a02:2f0a:e013:a500:4493:1afd:5075:ff16(Preferred)
   Temporary IPv6 Address . . . . . : 2a02:2f0a:e013:a500:f8df:3a9c:d91a:5c2b(Preferred)
   Link-local IPv6 Address . . . . . : fe80::933c:9161:4154:0baf9(Preferred)
   IPv4 Address. . . . . : 192.168.1.175(Preferred)
   Subnet Mask . . . . . : 255.255.255.0
   Lease Obtained. . . . . : miercuri, 20 noiembrie 2024 21:09:56
   Lease Expires . . . . . : joi, 21 noiembrie 2024 21:09:55
   Default Gateway . . . . . : fe80::6e5a:b0ff:fe79:2b4449
   192.168.1.1
   192.168.1.1
   265851896
   DHCPv6 IAID . . . . . : 60-01-00-01-2D-30-E8-45-CC-5E-F8-7C-5A-F5
   DHCPv6 Client DUID. . . . . : 0a00:2f0c:8800:3:1
   DNS Servers . . . . . : 192.168.1.1
   180.180.0.1
   180.180.0.1
   NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Conexiune de rețea Bluetooth:

   Media State . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : 
   Description . . . . . : Bluetooth Device (Personal Area Network)
   Physical Address. . . . . : CC-5E-F8-7C-5A-F6
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . : Yes

Ethernet adapter vEthernet (Default Switch):

   Connection-specific DNS Suffix  . : 
   Description . . . . . : Hyper-V Virtual Ethernet Adapter
   Physical Address. . . . . : 00-15-50-38-01-00
   DHCP Enabled. . . . . : No
   Autoconfiguration Enabled . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::8149:5513:b175:35e940(Preferred)
   IPv6 Address. . . . . : 192.168.160.1(Preferred)
   Subnet Mask . . . . . : 255.255.240.0
   Default Gateway . . . . . : 
   DHCPv6 IAID . . . . . : 67109049
   DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-30-E8-45-CC-5E-F8-7C-5A-F5
   NetBIOS over Tcpip. . . . . : Enabled
```

Comanda "ipconfig"

→ afișează informațiile de bază (adresa IP, masca de subnet, gateway-ul default)

→ se folosește pentru verificări rapide

Comanda "ipconfig /all"

→ afișează informații suplimentare precum adresa MAC, conexiuni DHCP, informații despre adresa IPv6, etc

10. Pornind de la adresele MAC atât de mobil cât și de la placa de rețea a PC-ului calculați care ar fi adresele IPv6 corespunzătoare.

Pentru mobil :

BC : 69 : E2 : 30 : 92 : A1

BC : 69 : E2 : FF : FE : 30 : 92 : A1

1101 1100 : 69 : E2 : FF : FE : 30 : 92 : A1  
1234 567

1101 1110 : 69 : E2 : FF : FE : 30 : 92 : A1

IPv6 : BE : 69 : E2 : FF : FE : 30 : 92 : A1

Pentru PC :

CC : 5E : F8 : 7C : 5A : F5

1100 1100 : 5E : F8 : FF : FE : 7C : 5A : F5  
1234 567

1100 1110 : 5E : F8 : FF : FE : 7C : 5A : F5

IPv6 : CE : 5E : F8 : FF : FE : 7C : 5A : F5