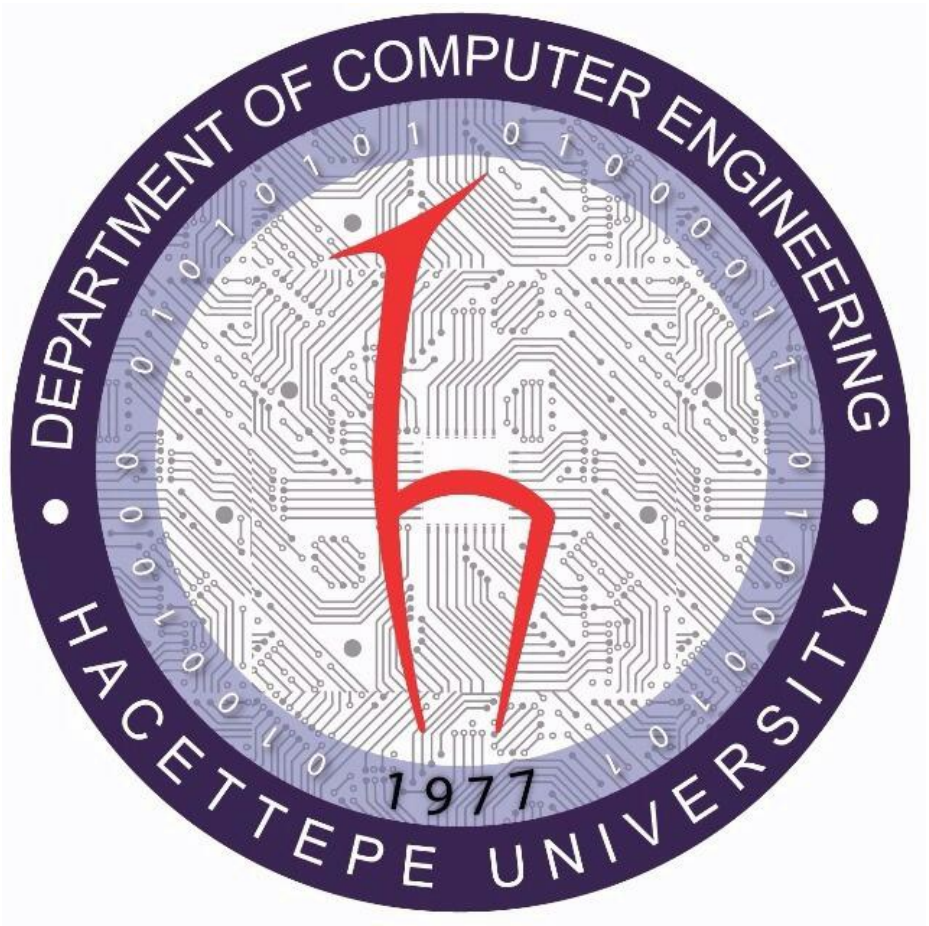

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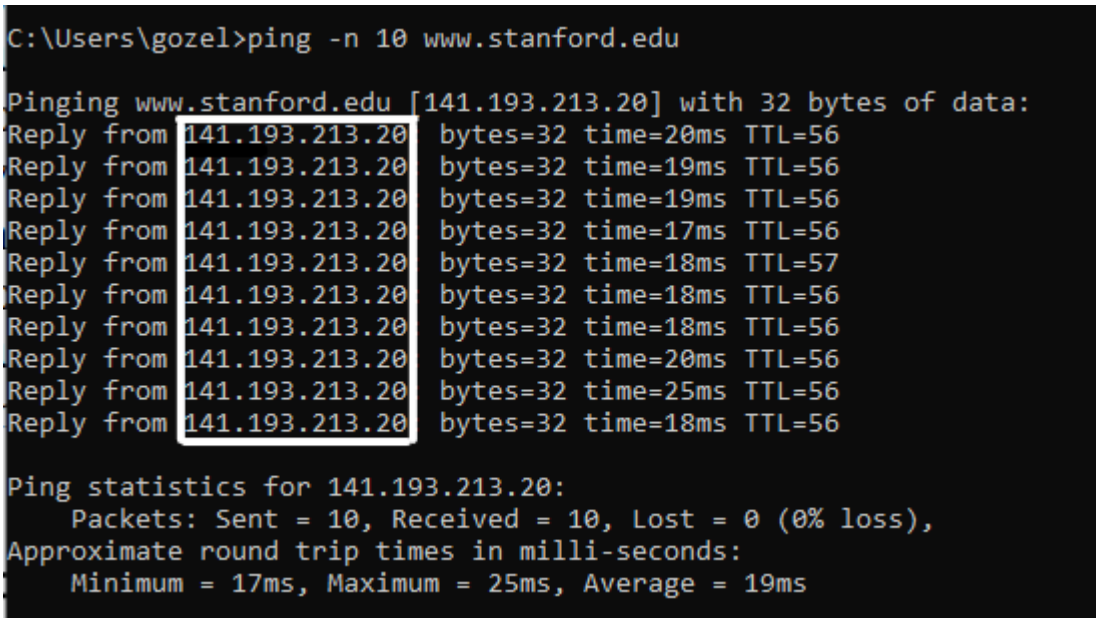
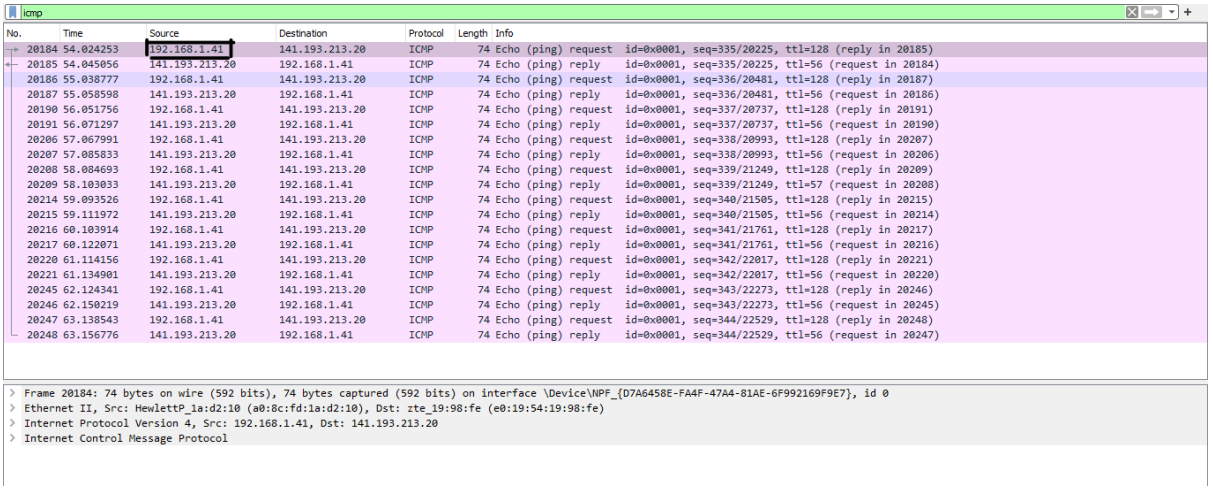
BBM 453 Computer Networks Lab - ICMP Lab Assignment
Group ID: 1

1. What is the IP address of your host? What is the IP address of the destination host?

Ans: The IP address of our host is **192.168.1.41**. The IP address of the destination host is **141.193.213.20.**





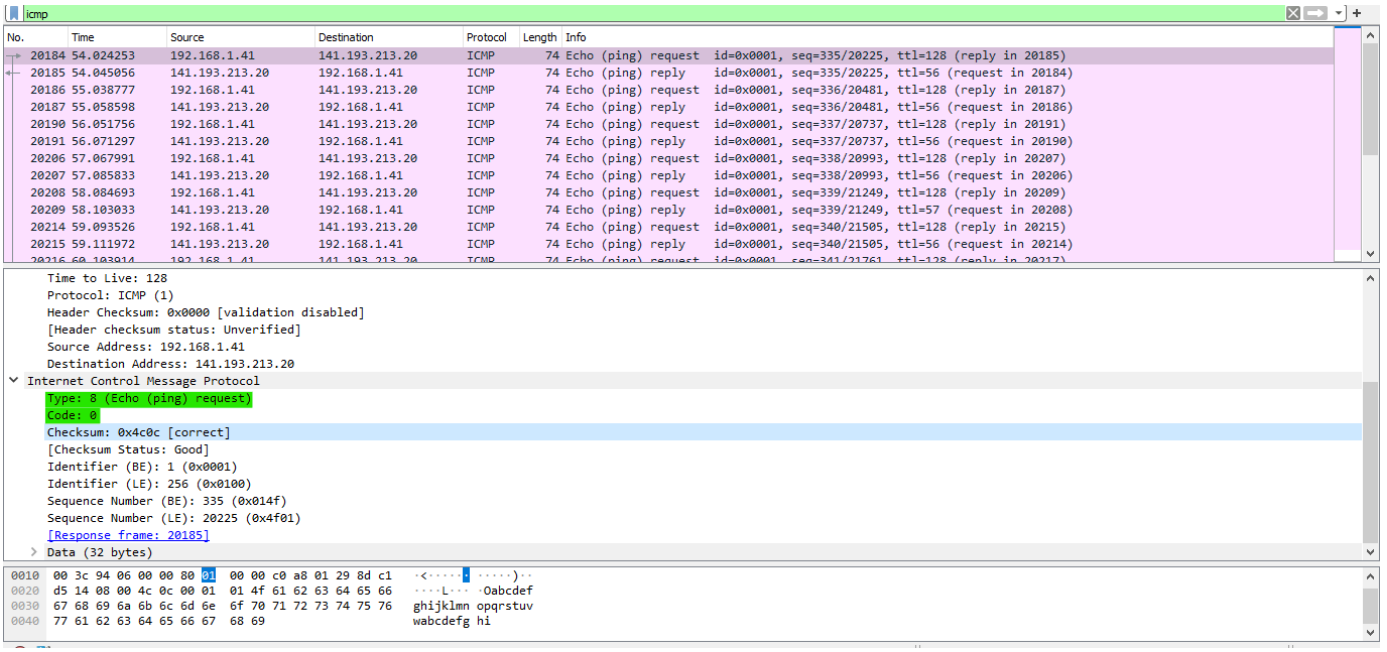
2. Why is it that an ICMP packet does not have source and destination port numbers?

Ans: It is designed for communicating network layer information between hosts and routers, not between application layer protocols. It does not exchange data so that it does not have any specific port.

3. Examine one of the ping request packets sent by your host. What are the ICMP type and code numbers? What other fields does this

ICMP packet have? How many bytes are the checksum, sequence number and identifier fields?

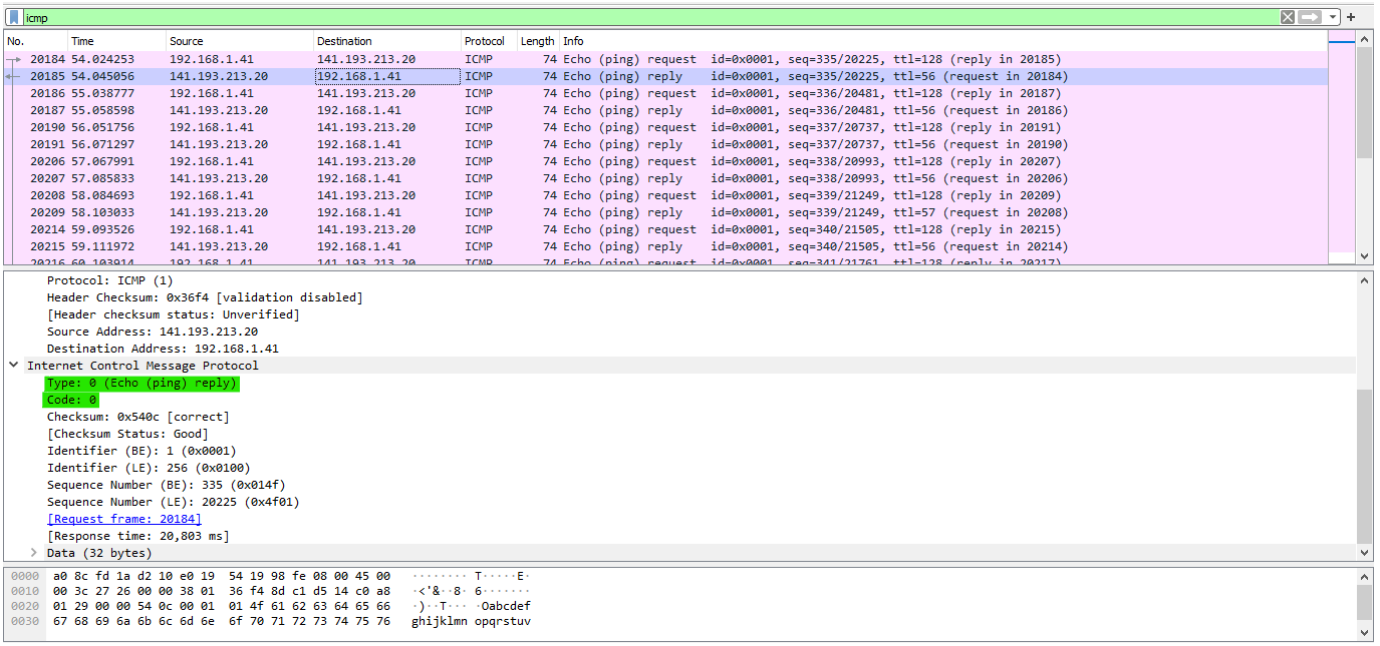
Ans:



The ICMP type is **8** and the code number is **0.** Also, there are **checksum, identifier, sequence number,** and **data** fields. The checksum, identifier, sequence number fields have **2 bytes**.

4. Examine the corresponding ping reply packet. What are the ICMP type and code numbers? What other fields does this ICMP packet have? How many bytes are the checksum, sequence number and identifier fields?

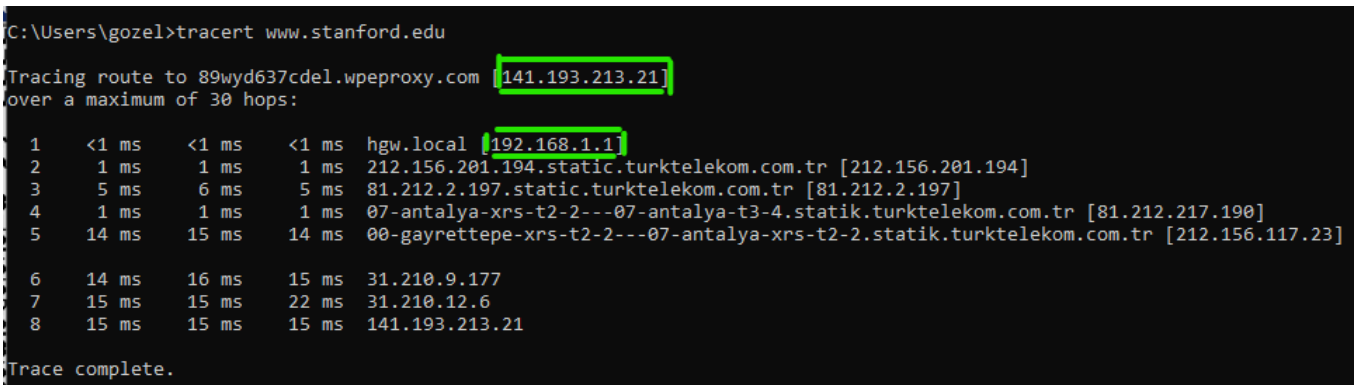
Ans:

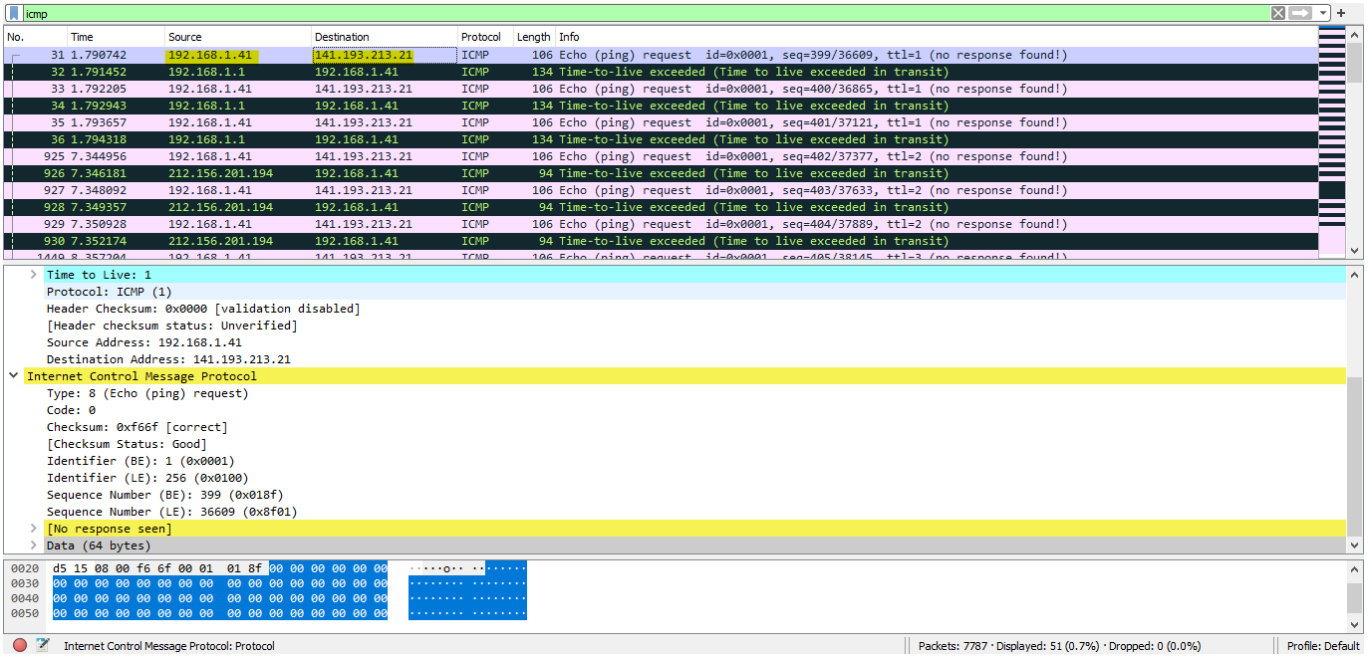


The ICMP type is **0** and the code number is **0.** Also, there are **checksum, identifier, sequence number,** and **data** fields. The checksum, identifier, sequence number fields have **2 bytes**.

5. What is the IP address of your host? What is the IP address of the target destination host?

Ans:





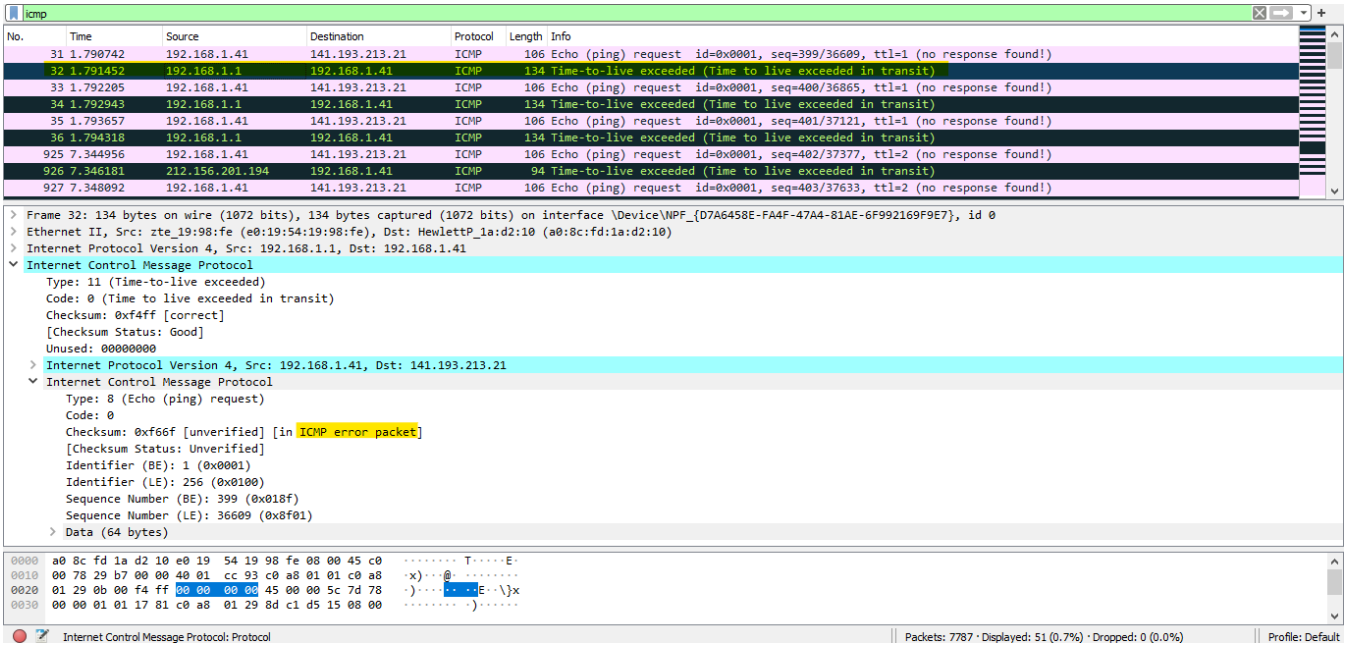
The IP address of our host is **192.168.1.1.** The IP address of the destination host is **141.193.213.21.**

6. If ICMP sent UDP packets instead (as in Unix/Linux), would the IP protocol number still be 01 for the probe packets? If not, what would it be?

Ans: No. It would be different if ICMP sent UDP packets. It would be **0x11** instead of 01.

7. Examine the ICMP error packet in your screenshot. It has more fields than the ICMP ping packet. What is included in those fields?

Ans:



It contains the IP header and the first 8 bytes of the original ICMP packet that the error is for.

8. Within the traceroute measurements, is there a link whose delay is significantly longer than others? Refer to the screenshot in your figure, is there a link whose delay is significantly longer than others? On the basis of the router names, can you guess the location of the two routers on the end of this link?

Ans:

```
C:\Users\gozel>tracert stanford.edu

Tracing route to stanford.edu [171.67.215.200]
over a maximum of 30 hops:

  1     1 ms    <1 ms    <1 ms  hgw.local [192.168.1.1]
  2     1 ms    <1 ms     1 ms  212.156.201.194.static.turktelekom.com.tr [212.156.201.194]
  3     2 ms     2 ms     2 ms  81.212.2.197.static.turktelekom.com.tr [81.212.2.197]
  4     2 ms     1 ms     1 ms  07-antalya-xrs-t2-2---07-antalya-t3-4.statik.turktelekom.com.tr [81.212.217.190]
  5    15 ms    14 ms    14 ms  00-gayrettepe-xrs-t2-2---07-antalya-xrs-t2-2.statik.turktelekom.com.tr [212.156.117.23]

  6    14 ms    14 ms    14 ms  00-ebgp-gayrettepe-k---00-gayrettepe-xrs-t2-2.statik.turktelekom.com.tr [81.212.202.19]

  7    52 ms    51 ms    51 ms  301-fra-col-2---00-gayrettepe-xrs-t2-2.statik.turktelekom.com.tr [212.156.101.196]
  8    58 ms    52 ms    51 ms  ipv4.decix-frankfurt.core1.fra1.he.net [80.81.192.172]
  9    58 ms    58 ms    58 ms  100ge1-1.core1.par2.he.net [72.52.92.13]
 10   135 ms   134 ms   135 ms  100ge10-2.core1.ash1.he.net [184.105.213.173]
 11   192 ms   192 ms   193 ms  100ge7-2.core1.pao1.he.net [184.105.222.41]
 12   192 ms   193 ms   193 ms  stanford-university.100gigabitethernet5-1.core1.pao1.he.net [184.105.177.238]
 13   193 ms   193 ms   193 ms  woa-west-rtr-vl3.SUNet [171.66.255.132]
 14     *        *        *     Request timed out.
 15   194 ms   193 ms   193 ms  web.stanford.edu [171.67.215.200]

Trace complete.
```

There is a link that has significantly longer delays between steps 4-5 and 9-10. This could occur because of the distance.