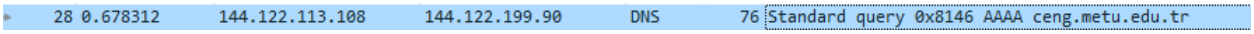
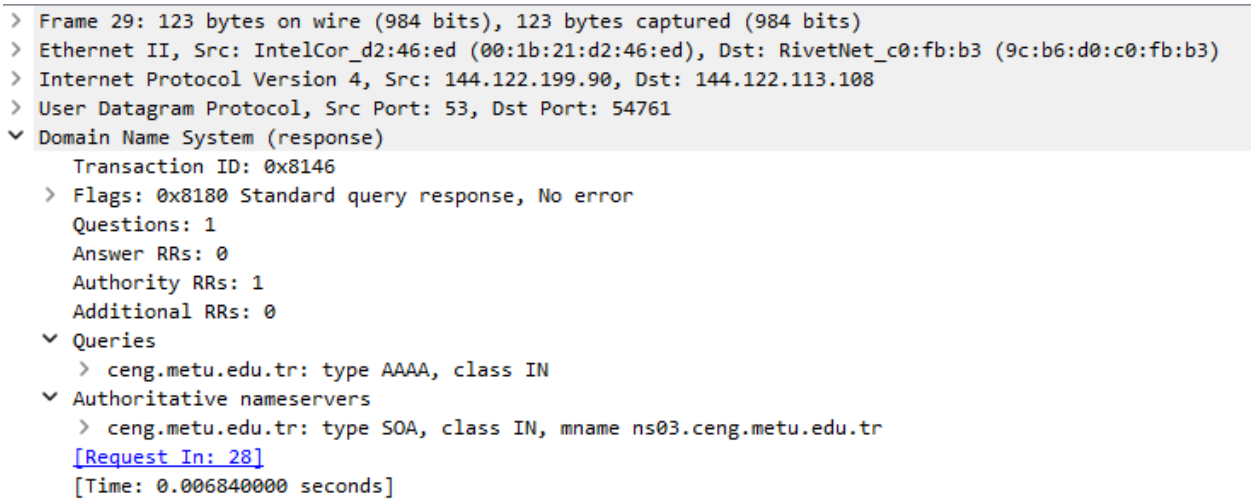
Questions

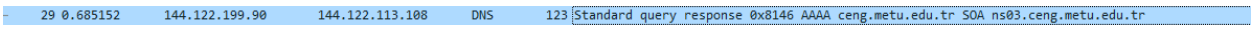
1. Only 1 query was sent from my computer to DNS server to get the address “ceng.metu.edu.tr”.



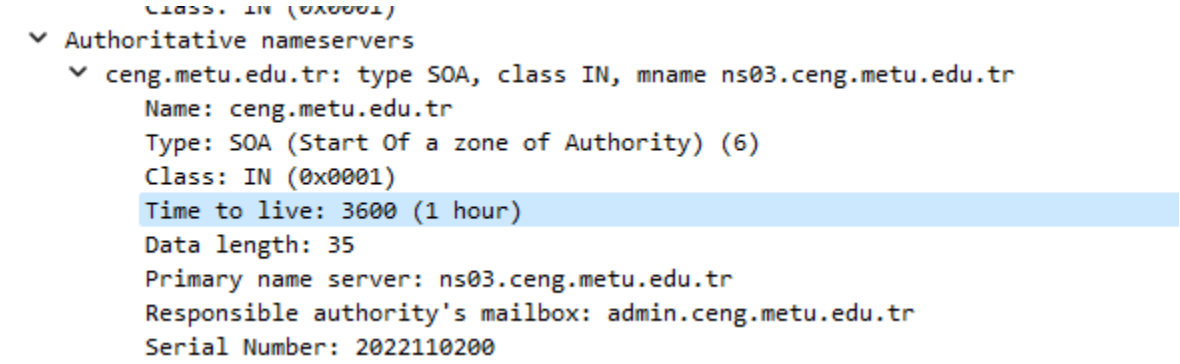
2. Only 1 DNS server



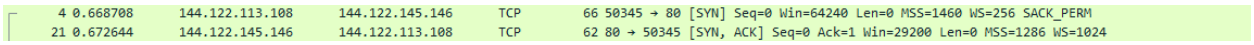
3.144.122.199.90



4.Yes it is cached since we have Time to live parameter in response packet.



5.

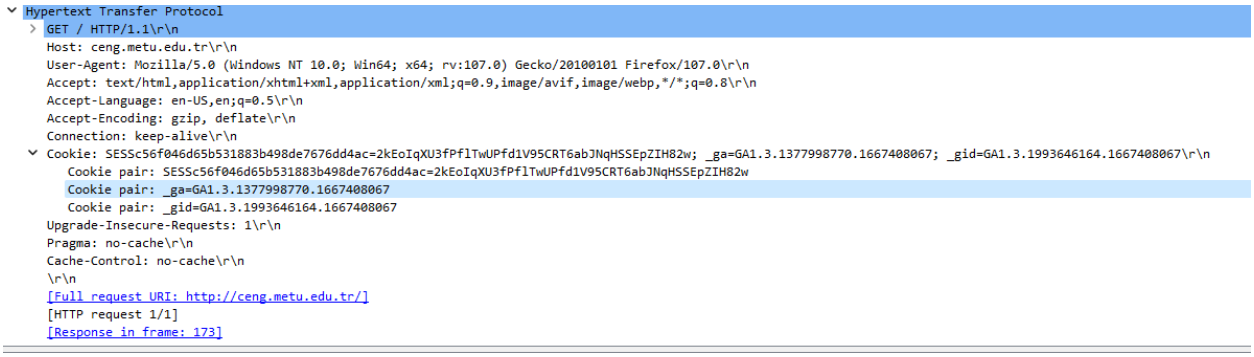


a) TCP Protocol

b) A TCP handshake SYN-(SYN-ACK) is required in order to establish a connection. After this, data can be sent. Additionally, HTTP is application layer protocol which is on top of TCP(transport layer), that's why we first need TCP handshake.

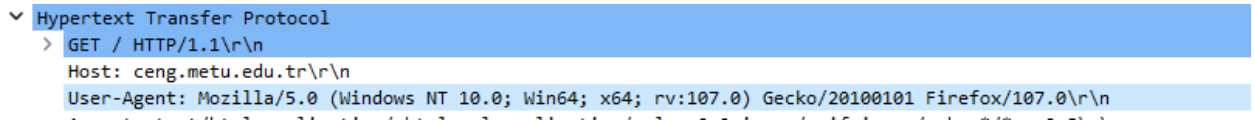
c) 0.672644-0.668708=0.003936

6) Yes a cookie was sent with the first HTTP request.



7)

a) User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:107.0) Gecko/20100101 Firefox/107.0



b) Yes, the user-agent string includes the browser that I'm using. It also includes operating system that my computer has. "Gecko/20100101" which is rendering engine and its version which Firefox is based on. We also see "Mozilla/5.0" which is a general token that says the browser is Mozilla compatible, and is common to almost every browser today. "Firefox/107.0" which Is the browser and its version that was being used.

DNS

No we can't. Because valid email address has four parts. Recipient name, @ symbol, domain name and top-level domain. For the address "merkel@de" , we have recipient name (merkel), @ symbol and country code top-level domain(de), but we don't have domain name which should be after the @ symbol.

For instance: "merkel@domainname.de" can be a valid email address.