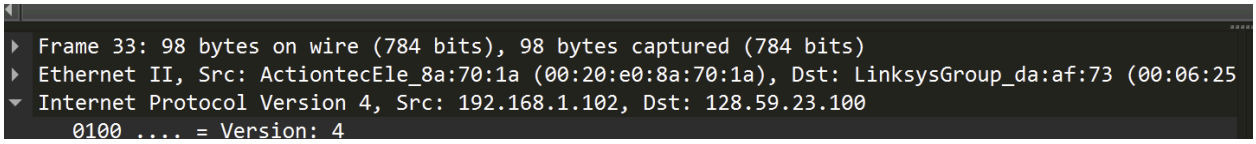
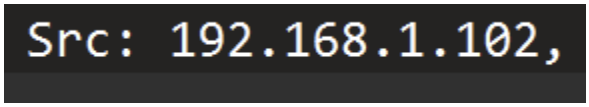
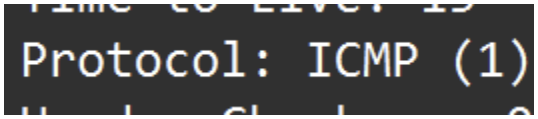
CSCI156 IP Lab

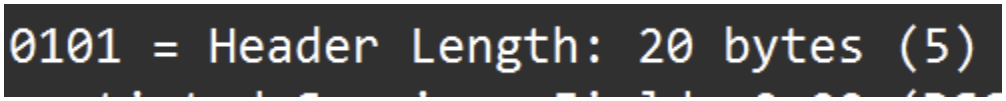
1. 



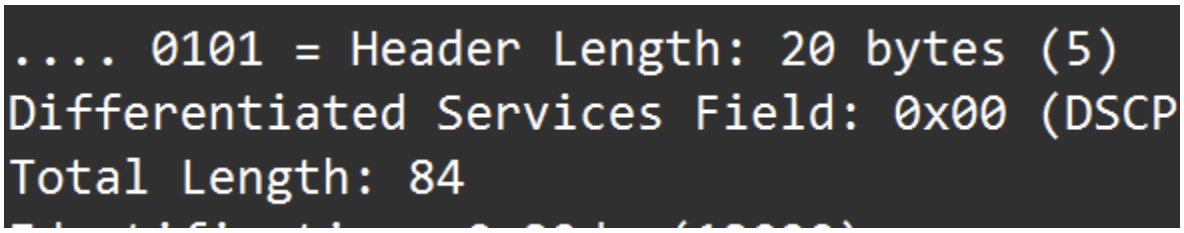
The IP address of my computer is “192.168.1.102”.

2. 

It is ICMP(1).

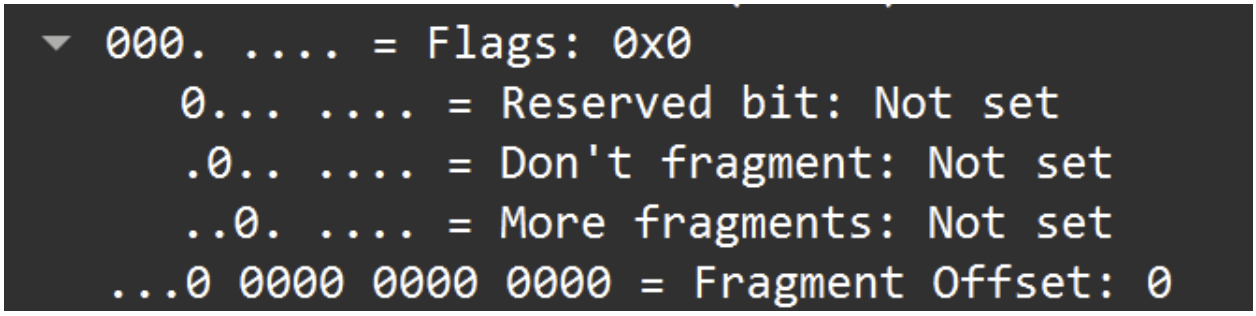
3. 

The IP header is 20 bytes.

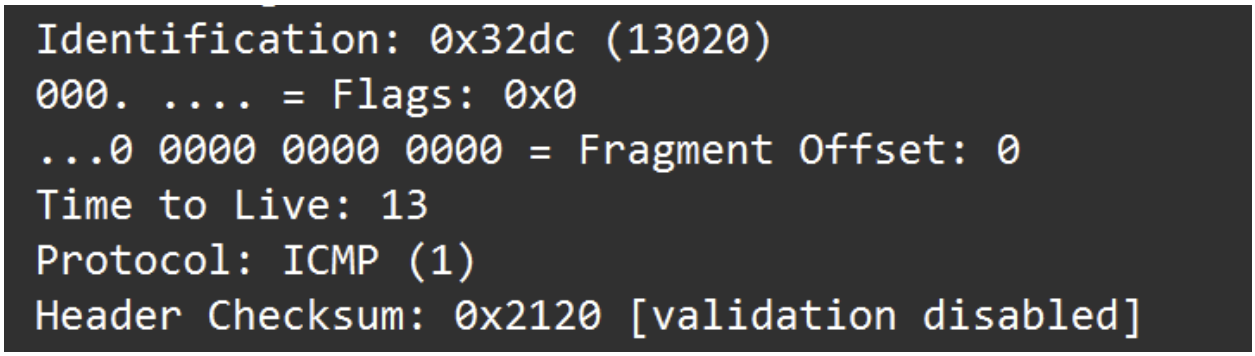


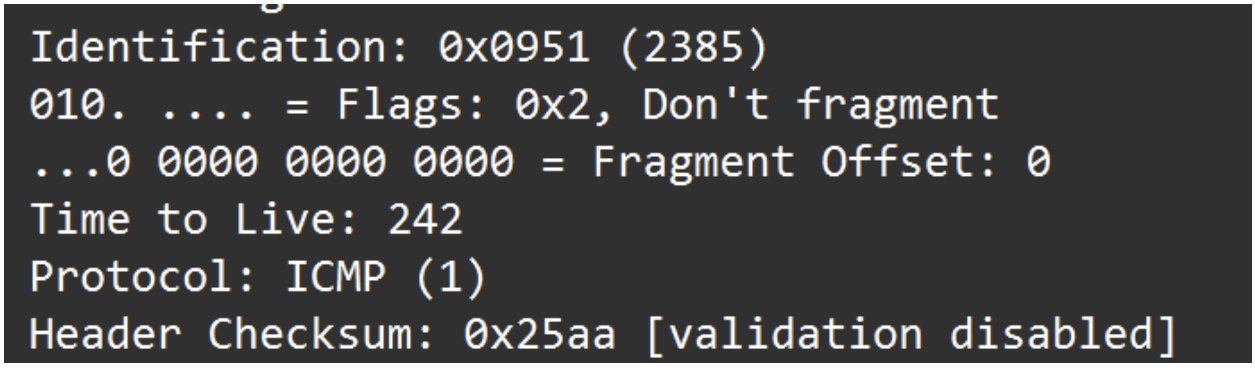
It is 64 bytes. You achieve this value from Total length - header length. So, 84 - 20 = 64 bytes.

4. The IP datagram has not been fragmented. This is determined whether the fragment flag has been set or not, and in this case it has not, therefore there was nor fragmentation.



5. The fields that always change are the TTL field, the identification field and the header checksum field.

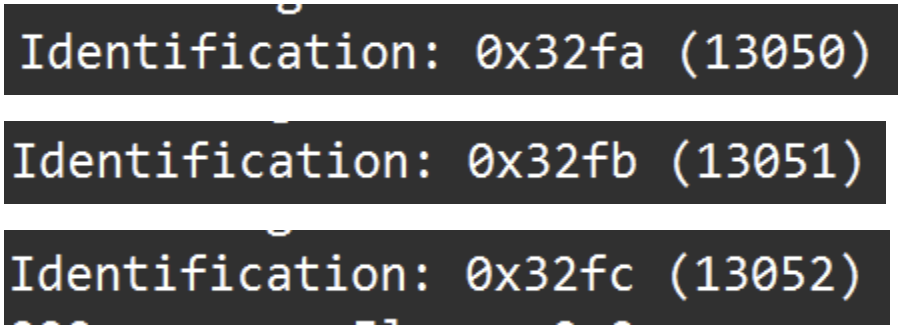




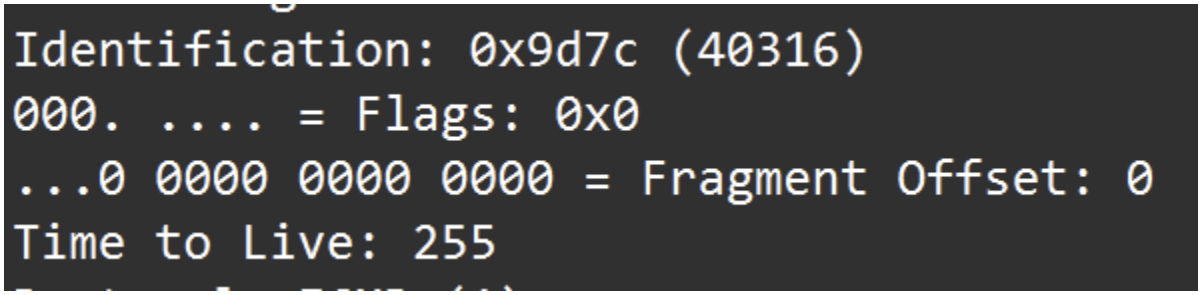
Here is an example of 2 different ones.

6. The fields that stay constant and must stay constant are the src address, destination address, IP version and header length because they define the communication endpoints and the overall structure of the packet. The fields that must change are the TTL field, the identification field and the header checksum field because they track the packet's lifetime fragmentation details and try to ensure integrity of the datagram.

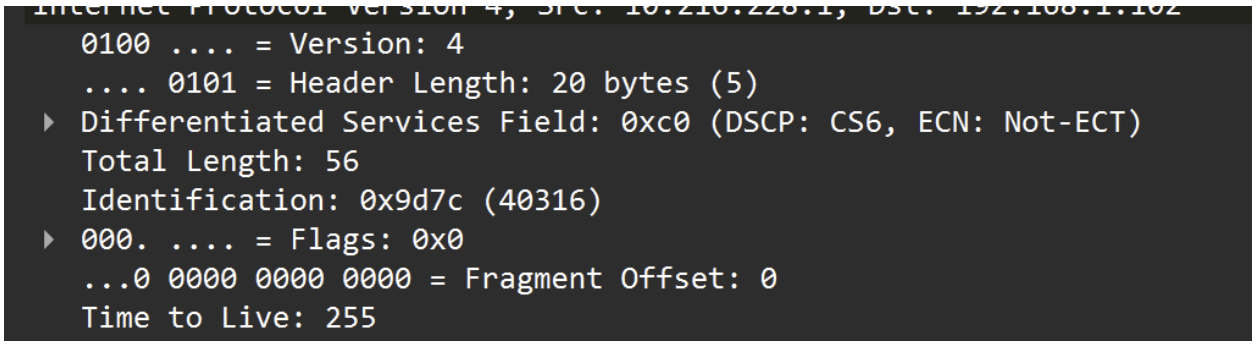
7. I notice that the value of the field increases by 1.

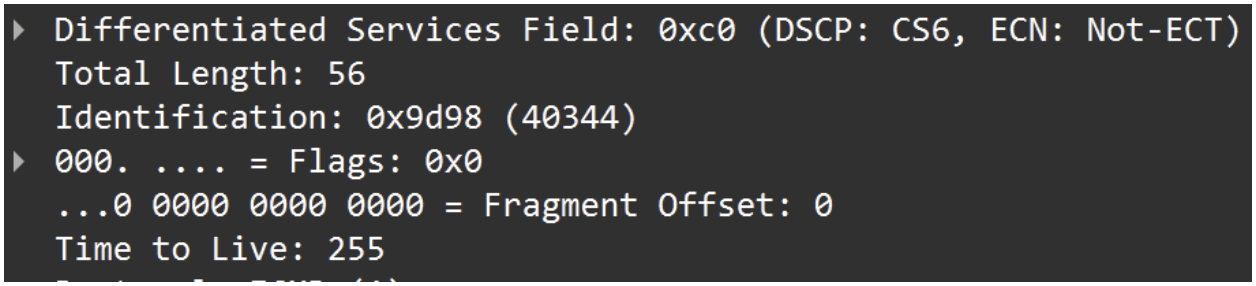


8. Identification was 0x9d7c (40316) and the TTL was 255.



9. The TTL does not change but the identification field does. The reason is because the identification field is for dynamic values to help identify fragmentation and the TTL field a default value chosen by the router.





10. Yes, it has been fragmented across more than one IP datagram.
11. For the IP header of the first fragment, the “more fragment” flag was set which indicates that there are more fragments. What indicates it is the first fragment is that the fragment offset is set to 0. Anything above 0 will be a subsequent fragment, and the rest will have a MF flag set except for the last fragment. The IP datagram is 1480 bytes in length.
12. The flag for this one is 0x0, which indicates that it is the last fragment. We can tell there are no more fragments set because the “more fragment” flag is not set.
13. The fields that change are total length, more fragments, fragment offset and flags.
14. There were 3 fragments created.
15. The fields that change are also total length, more fragments, fragment offset and flags.