NASA 2016 HW1 NA part

B03902086 李鈺昇

1. Internet Model

References:
en.wikipedia.org/wiki/OSI_model
technews.tw/2015/04/20/google-quic-tcp-udp

1.1
DHCP: Application Layer
IP: Network Layer

1.2
HTTP is a commonly used protocol for all data (including texts and multimedia) exchange and display among the Internet.
FTP is a protocol to transfer files between a client-server pair.

1.3
I think QUIC mostly lies in the Application Layer, since it is based on UDP, which lies in the Transport Protocol. And in the 5-layer model, the only layer over the Transport Protocol is the Application Protocol.

2. IP

References:
www.bleepingcomputer.com/forums/t/536252/how-to-tell-if-you-have-a-private-ip-address-or-a-public-ip-address
electronicdesign.com/embedded/whats-difference-between-ipv4-and-ipv6
www.omnisecu.com/tcpip/ipv6/differences-between-ipv4-and-ipv6.php
www.howtogeek.com/175566/htg-explains-are-you-using-ipv6-yet-should-you-even-care

2.1
Private IPs can only be in the following address ranges:

10.0.0.0 ~ 10.255.255.255
172.16.0.0 ~ 172.31.255.255
192.168.0.0 ~ 192.168.255.255
So we only have to check these three ranges to determine if an IP is private or not.

2.2
For one thing, IPv6 addresses are represented in hexadecimal, while IPv4 in decimal. For another, IPsec is default to IPv6, while it's not required for IPv4.

2.3
No, I can’t.
Operating system, router, and ISP may need new settings or updates.

3. Wireshark

References:
stackoverflow.com/questions/11562690/wireshark-filter-for-filtering-both-destination-source-ip-address-and-the-protoc

My filtering conditions were
```
http && (ip.src == 140.112.8.116)
```