CS 484/504 Home Work - III

Fall 2022
Graduate Level Course Code CS 504
Computer Science Department, New Mexico State University

For graduate students ($10 \times 10 = 100$)
For undergraduate students ($8 \times 12.5 = 100$)
For undergraduate students ($2 \times 12.5 = 25$) for extra credit questions 4 and 8

1. What is the Difference between OSPF and BGP. (descriptive question)

2. Do a trace route as discussed in the class for `status.pakwheels.com`

3. Do a trace route as discussed in the class for `en.dailypakistan.com.pk`

4. Do a trace route as discussed in the class for `xvelopers.com`

5. Imagine we have a bus switching fabric on a switching with 4 ports. Assume FIFO being used to avoid collision on the bus. Describe a scenario where this setup would experience head of line blocking.
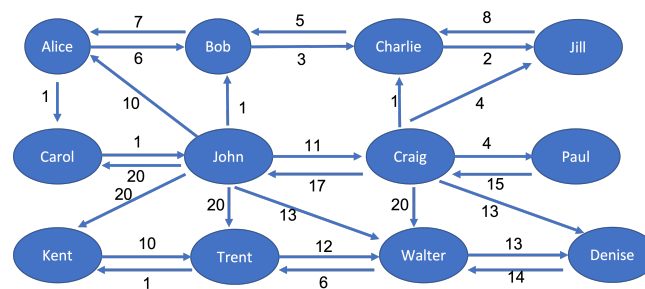

Figure 1: Example

6. Imagine BGFP in 1 has run for long enough that every one has found a path to everywhere else. What would John's routing table look like.

7. Imagine in Figure 1 John left and BGP runs until its stable again. What would the routing table for Craig look like ?

8. Imagine there is a network with a DHCP server. Unknown device keeps connecting to the network and acts as an alternate DHCP server. You want to catch who ever is behind this. Describe a plan to monitor and identify this device.

9. Consider a routing table below wit the mapping of IP addresses to the interfaces.

IP Address	Interface
10.0.0.0/16	ETH1
192.168.21.11/2	ETH2
0.0.0.0/0	ETH1
192.1678.25.23/0	ETH3
78.22.43.55	ETH2

Map the following IP address to the interfaces that they would go to

    (a) 192.268.25.23/24

    (b) 192.268.21.11/16

    (c) 0.0.0.0/1

10. Consider a routing table below wit the mapping of IP addresses to the interfaces.

IP Address	Interface
2001:db8:abcd:0012::0/64	ETH1
2001:db8:abcd:0012::0/80	ETH2
2001:db8:abcd:0012::0/96	ETH1
2001:db8:abcd:0012::0/112	ETH3
2001:db8:abcd:0012::0/128	ETH2

Map the following IP address to the interfaces that they would go to

    (a) 2001:db8:abcd:0012::0/72

    (b) 2001:db8:abcd:0012::0/88

    (c) 2001:db8:abcd:0012::0/100

    (d) 0.0.0.0/1