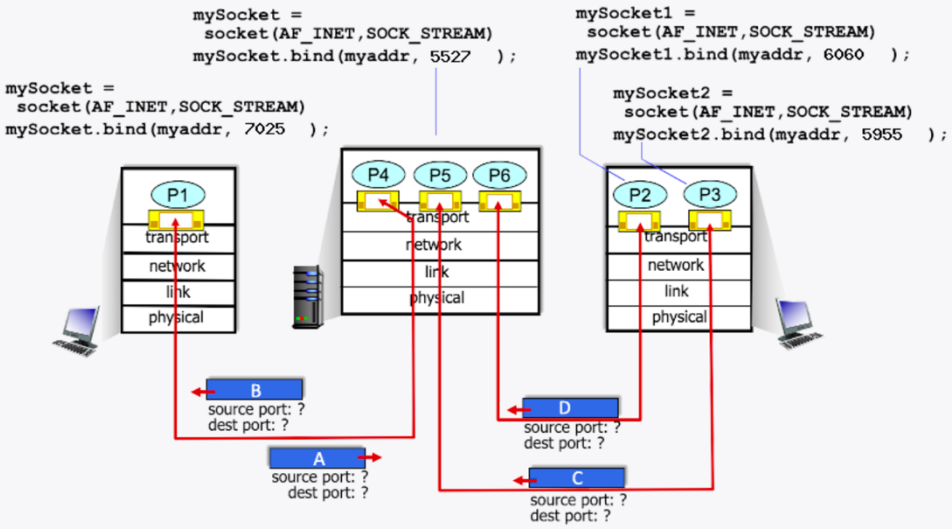
Mario Palacios
CSC 138 – Section 07
Assignment – Problem Solving

https://gaia.cs.umass.edu/kurose_ross/interactive/TCP_Mux_Demux.php

TCP MULTIPLEXING AND DEMULTIPLEXING

In the scenario below, the left and right TCP clients communicate with a TCP server using TCP sockets. The Python code used to create a single welcoming socket in the server is shown in the figure (the welcoming socket itself is not shown graphically); code is also shown for the client sockets as well. The three sockets shown in server were created as a result of the server accepting connection requests on this welcoming socket from the two clients (one connection from the client on the left, and two connections from the client on the right).



Questions:

1). What is the *source* port # for packet A? **Ans: 7025**

2). What is the *destination* port # for packet A? **Ans: 5527**

3). What is the *source* port # for packet B? **Ans: 5527**

4). What is the *destination* port # for packet B? **Ans: 7025**

5). What is the *source* port # for packet D? **Ans: 6060**

6). What is the *destination* port # for packet D? **Ans: 5527**

7). What is the *source* port # for packet C? **Ans: 5955**

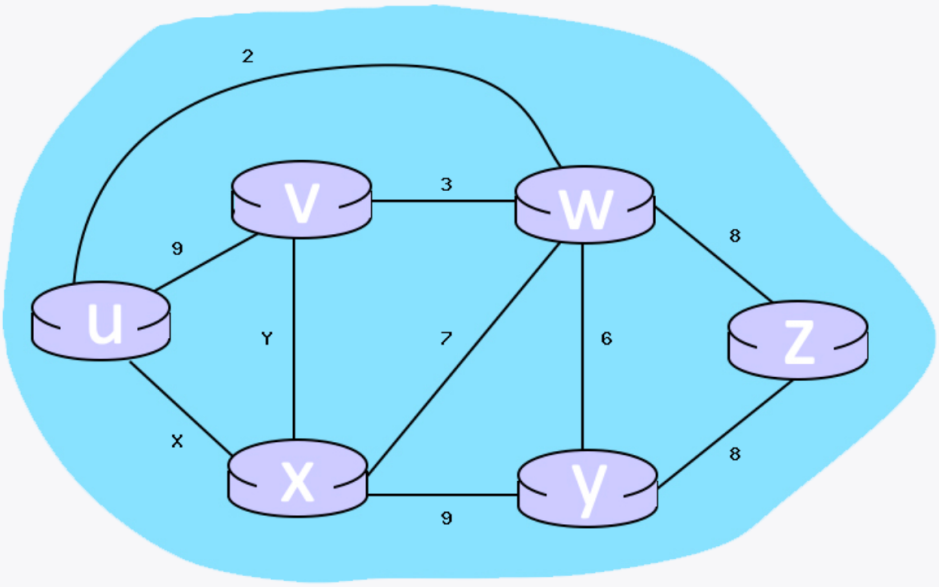
8). What is the *destination* port # for packet C? **Ans: 5527**

Mario Palacios
CSC 138 – Section 07
Assignment – Problem Solving

https://gaia.cs.umass.edu/kurose_ross/interactive/dij_advanced.php

DIJKSTRA'S LINK STATE ALGORITHM - ADVANCED

Consider the incomplete 6-node network shown below, with the given link costs.



Consider the completed table below, which calculates the shortest distance to all nodes from U:

Node	Shortest distance from U	Previous Node
U	0	n/a
W	2	U
X	4	U
V	5	W
Y	8	W
Z	10	W

Questions:

1). For link X, what is the cost associated with this link? If the answer can't be determined given the information, respond with 'n/a.' **Ans: 4**

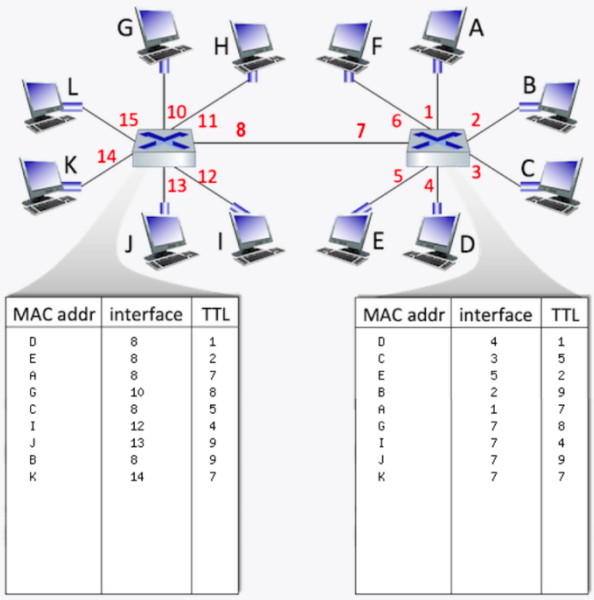
2). For link Y, what is the cost associated with this link? If the answer can't be determined given the information, respond with 'n/a.' **Ans: n/a**

Mario Palacios
CSC 138 – Section 07
Assignment – Problem Solving

https://gaia.cs.umass.edu/kurose_ross/interactive/learning_switch.php

LEARNING SWITCHES - ADVANCED

Consider the LAN below consisting of 10 computers connected by two self-learning Ethernet switches. (You may want to re-read section 6.4.3 in the text). At t=0 the switch table entries for both switches are empty. At t = 1, 2, 3, 4, 5, 6, 7, 8, and 9, a source sends to a destination as shown below, and the destination replies immediately (well before the next time step).



MAC addr	interface	TTL
D	8	1
E	8	2
A	8	7
G	10	8
C	8	5
I	12	4
J	13	9
B	8	9
K	14	7

MAC addr	interface	TTL
D	4	1
C	3	5
E	5	2
B	2	9
A	1	7
G	7	8
I	7	4
J	7	9
K	7	7

Questions:

1). At t=6, what two nodes communicated? Write your answer in alphabetical order as x,y (If there is only enough information for 1 node, write that, and if there's no information, write 'n/a')

Ans: n/a

2). At t=4, what two nodes communicated? Write your answer in alphabetical order as x,y (If there is only enough information for 1 node, write that, and if there's no information, write 'n/a')

Ans: I

3). At t=9, what two nodes communicated? Write your answer in alphabetical order as x,y (If there is only enough information for 1 node, write that, and if there's no information, write 'n/a')

Ans: B, J

4). At t=8, what two nodes communicated? Write your answer in alphabetical order as x,y (If there is only enough information for 1 node, write that, and if there's no information, write 'n/a')

Ans: G