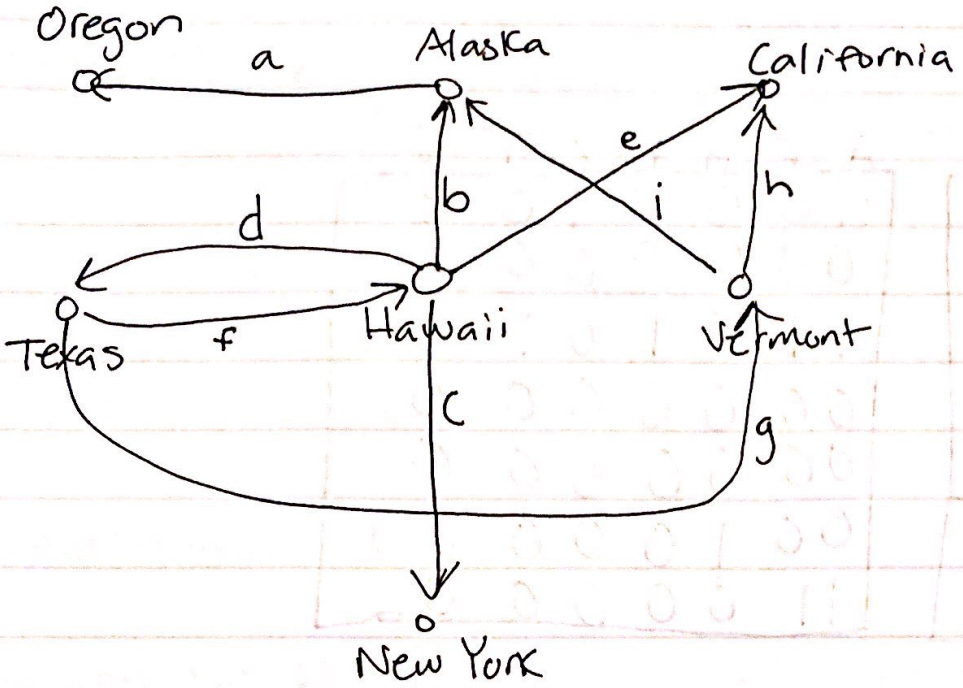
Graph Lab

1. & 4.



1. V(StateGraph) = {Alaska, California, Hawaii, New York, Oregon, Texas, Vermont}

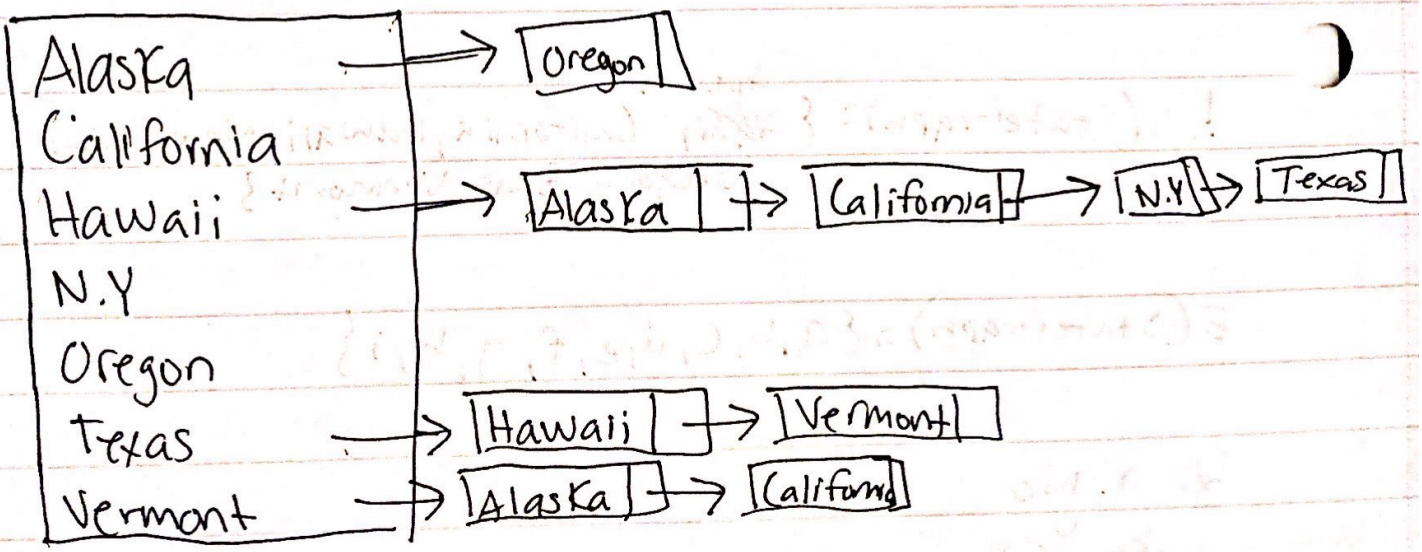
E(StateGraph) = {a, b, c, d, e, f, g, h, i}

2. a. No
   b. Yes
   c. Texas

3a.

States	A	C	H	N	O	T	V
Alaska	0	0	0	0	1	0	0
California	0	0	0	0	0	0	0
Hawaii	1	1	0	1	0	1	0
N.Y	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0
Texas	0	0	1	0	0	0	1
Vermont	1	1	0	0	0	0	0

3b.



4a. C
4b. A

10.

	S	DM	P1	P2	CO	A	OS	HLL	SS	C	E
Predcount	0	1	1	2	1	1	1	1	4	1	1

Topological order

S	DM	P1	P2	CO	A	OS	HLL	TC	C	SS	E

queue

S	DM	P1	P2	CO	A	OS	HLL	TC	C	SS	E

Predcount1

S	DM	P1	P2	CO	A	OS	HLL	TC	SS	C	E
~~0~~	~~0~~	2	1	1	1	1	1		4	1	1

Predcount2

~~0~~	~~0~~	0	0	1	1	1	1		4	1	1

Predcount3

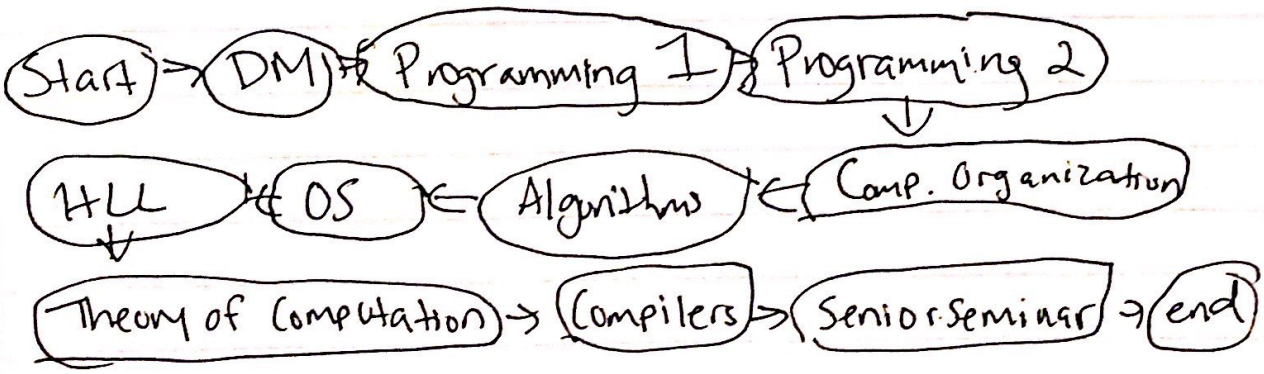
~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	0	0	0	1	4	1	1

Predcount4

~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	0	2	0	1	

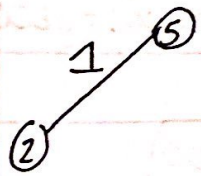
Predcount5

~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	0	1	1	

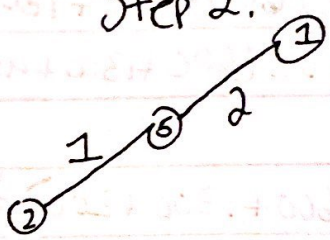


7.

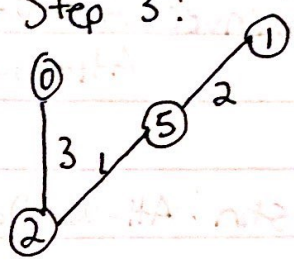
Step 1:



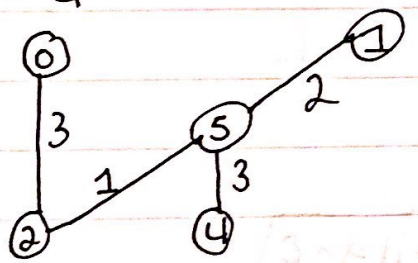
Step 2:



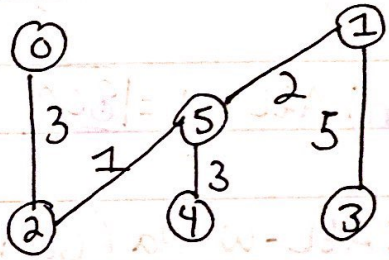
Step 3:



Step 4:



Step 5:



5. Atlanta → Denver : Atl - W - Da - De (600 + 1300 + 780) = **2680**
Atl - W - Da - C - De (600 + 1300 + 900 + 1000) = 3800

Atlanta → Austin : Atl - W - Da - Au (600 + 1300 + 200) = **2100**

Atlanta → Washington : Atl - W = **600**

Atlanta → Houston : AtL - H = **800**

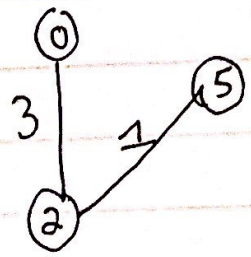
Atlanta → Dallas : AtL - W - Da (600 + 1300) = **1900**

Atlanta → Chicago : AtL - W - Da - C (600 + 1300 + 900) = **2800**
AtL - W - Da - De - C (600 + 1300 + 780 + 1000 = 3680

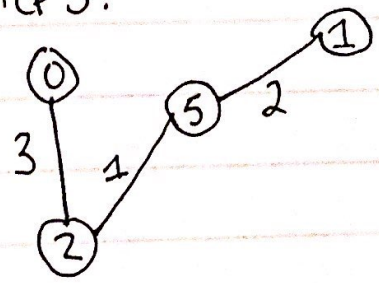
6.

Step 1:

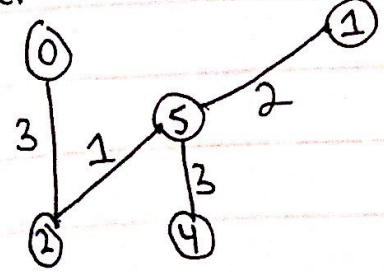
Step 2:



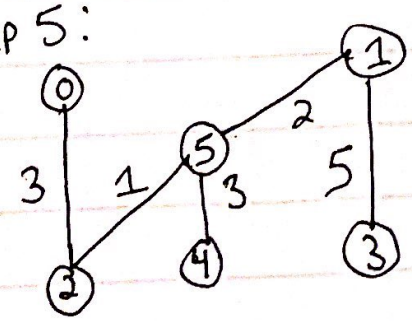
Step 3:



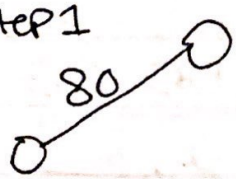
Step 4:



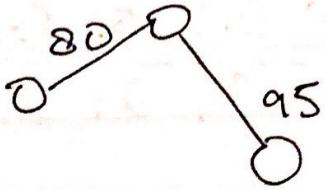
Step 5:



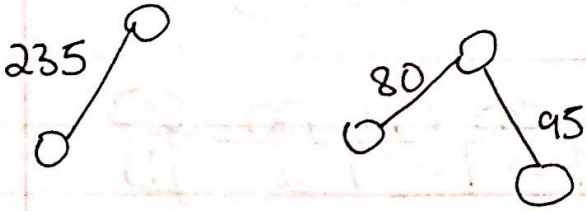
8. Step 1



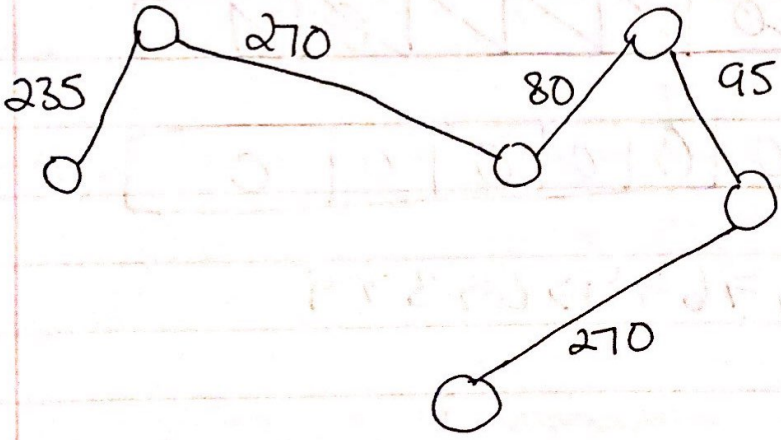
Step 2:



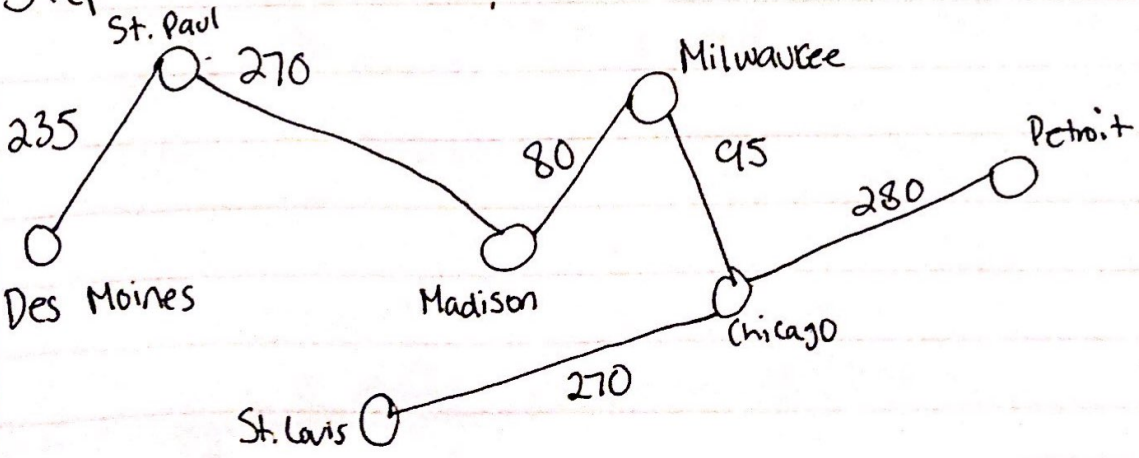
Step 3:



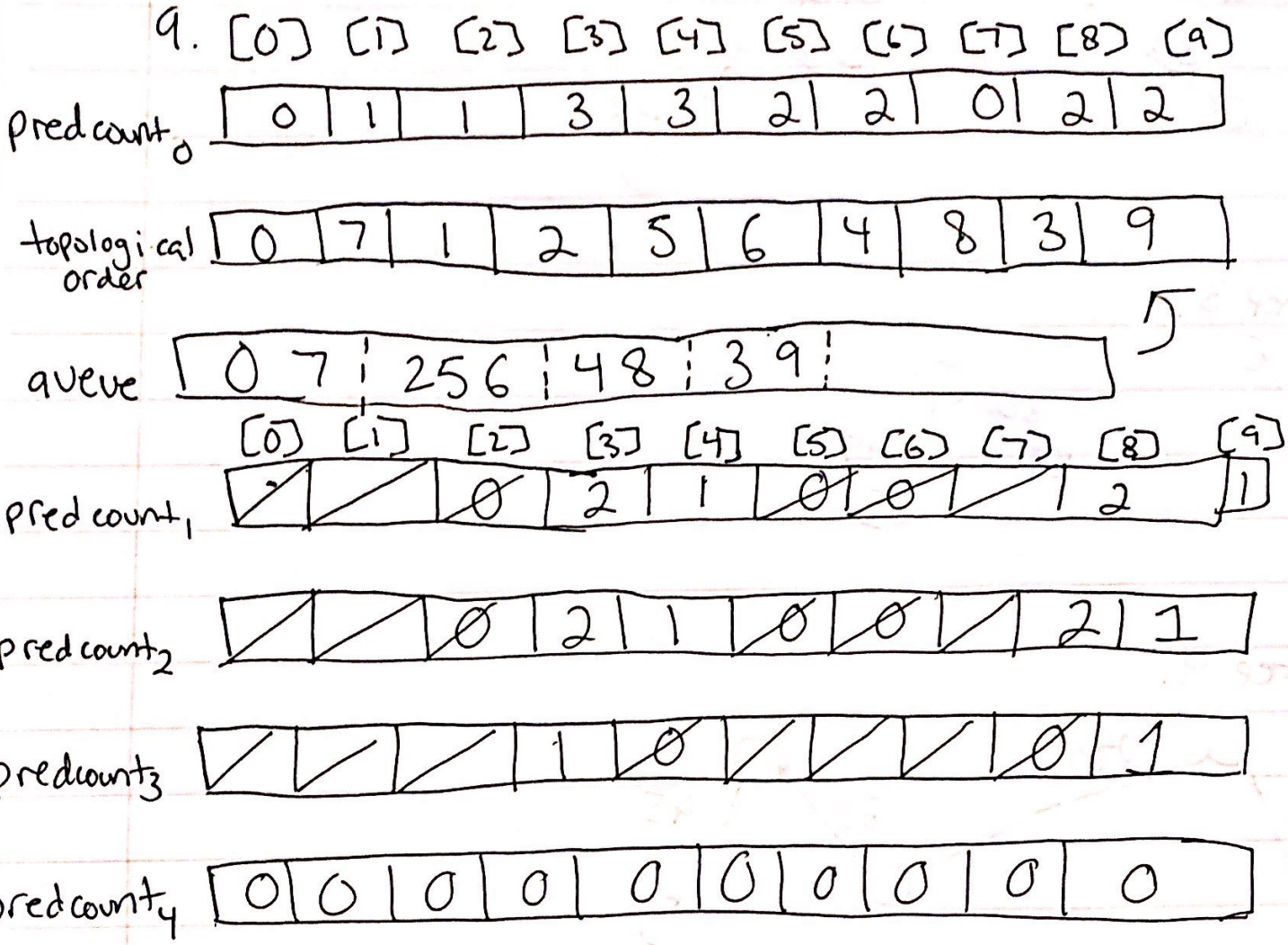
Step 4:



Step 5:



9.



answer: 0 → 7 → 1 → 2 → 5 → 6 → 4 → 8 → 3 → 9