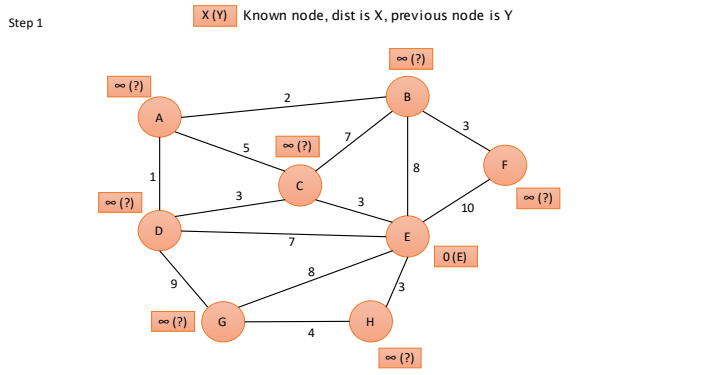
Ataollah Hosseinzadeh Fard
ID: 28610

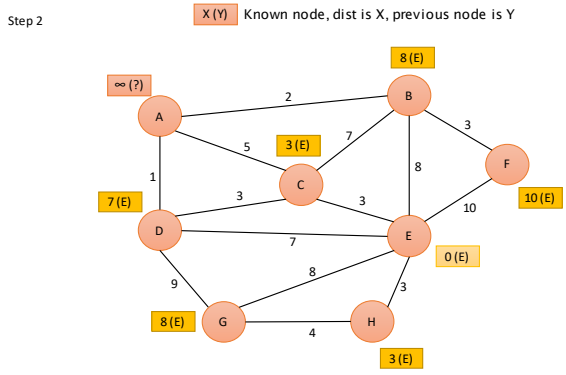
CS300 HW5

Q1)

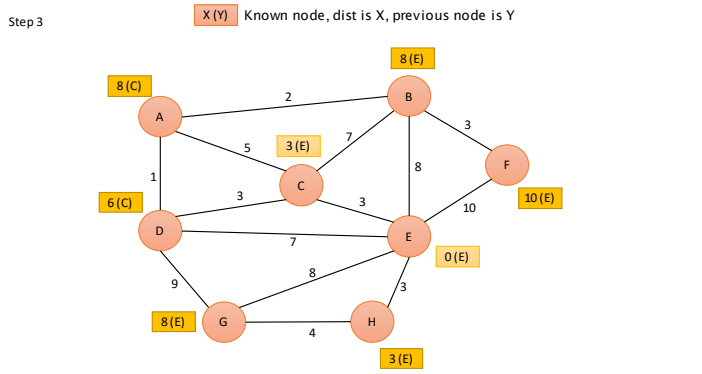
Step 1



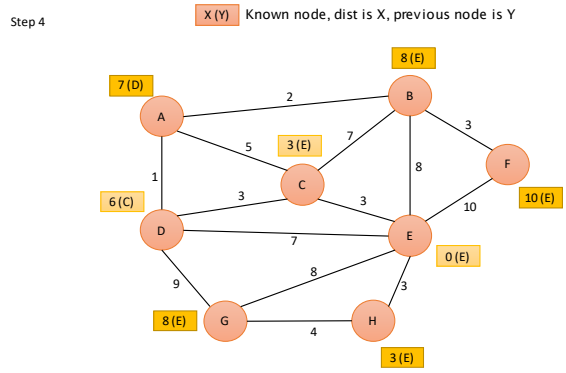
Step 2



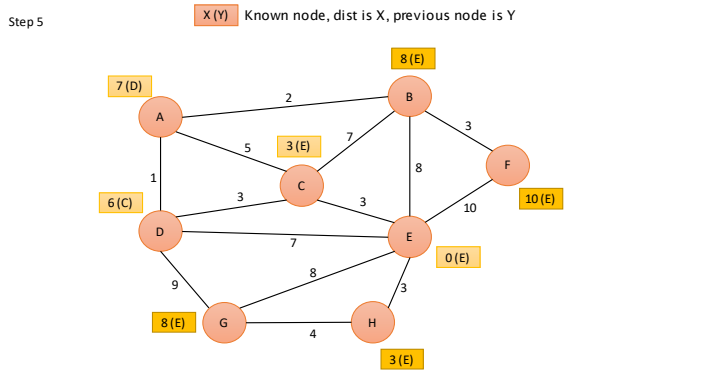
Step 3



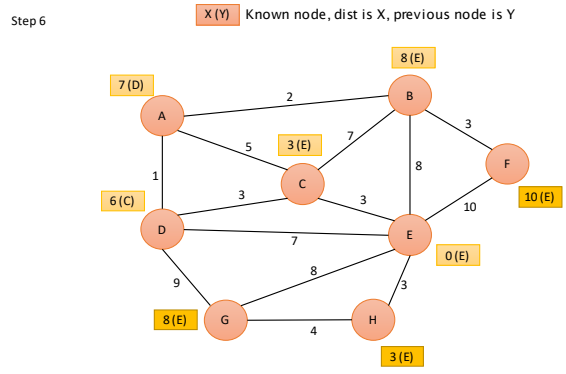
Step 4



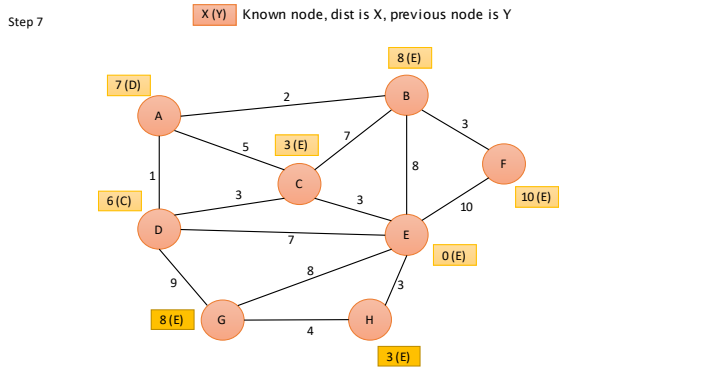
Step 5



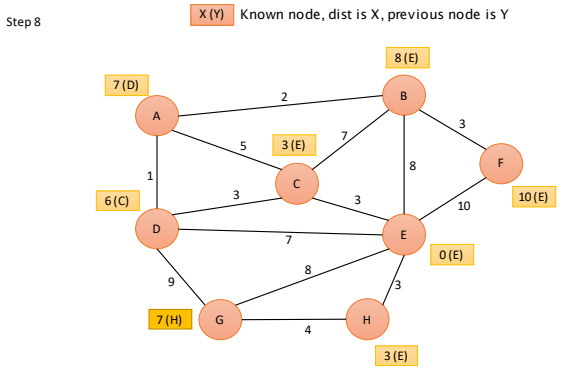
Step 6



Step 7



Step 8



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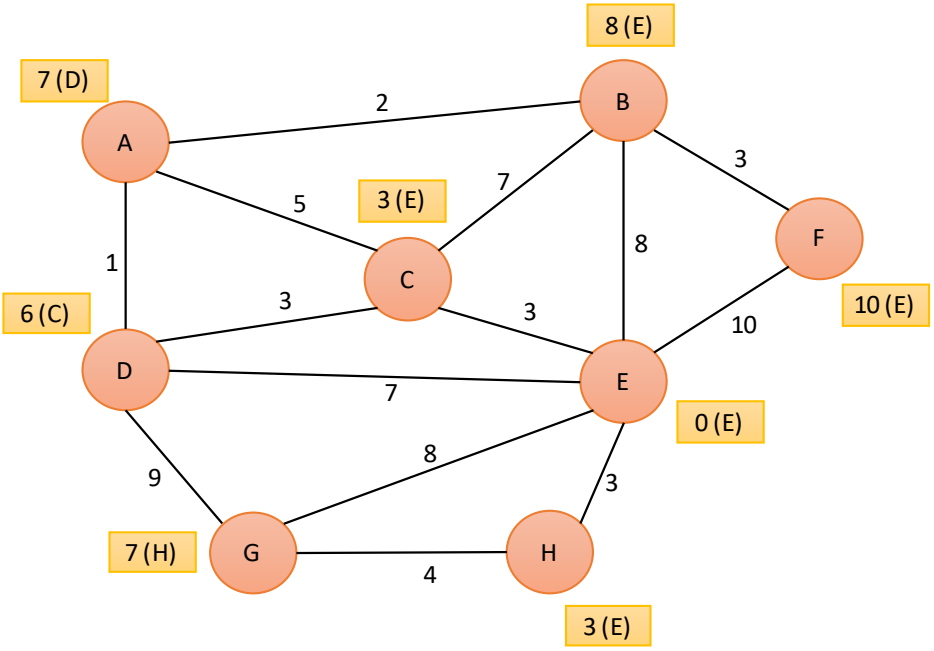
Step 9

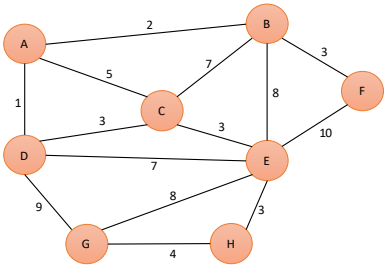
X (Y) Known node, dist is X, previous node is Y



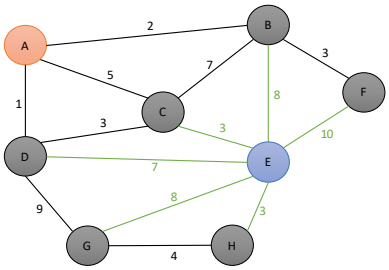
With the step 9, we can find any path from every vertex to vertex E, due to Dijkstra algorithm.

Q2)

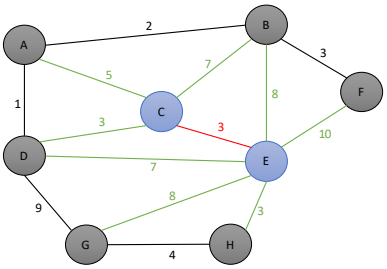
Step 1



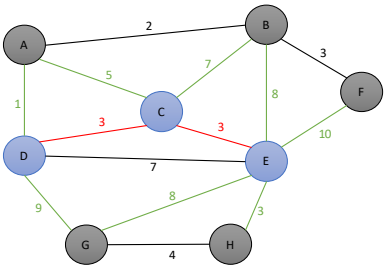
Step 2



Step 3



Step 4



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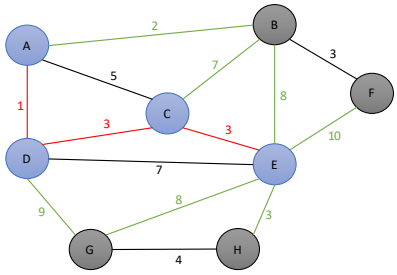
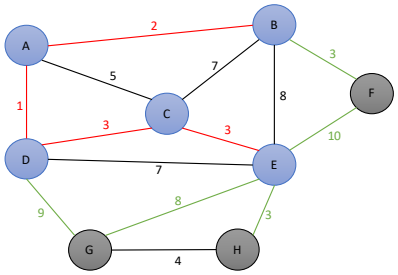
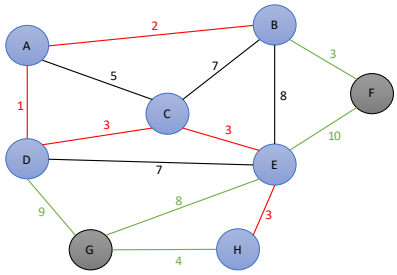
Step 5



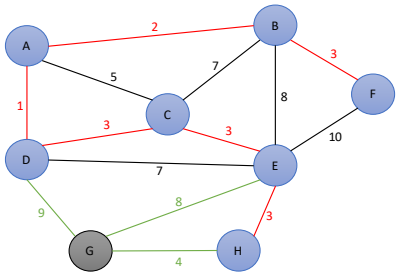
Step 6



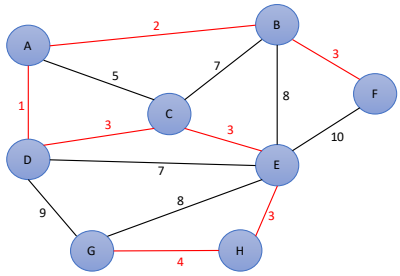
Step 7



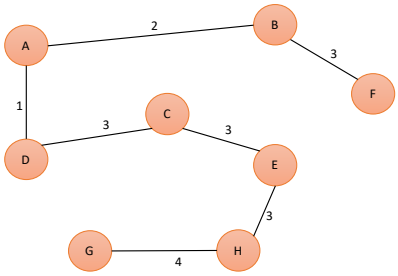
Step 8



Step 9



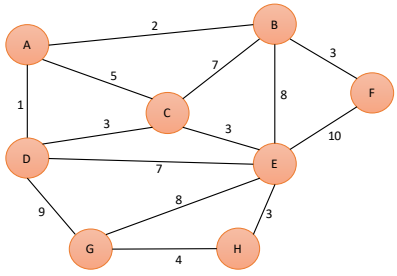
Step 10



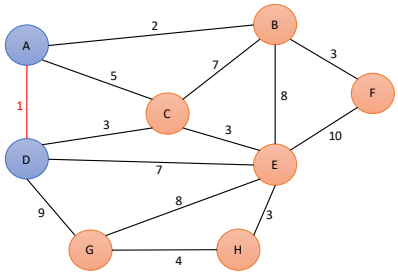
In step 10, we have the minimum spanning tree of Prim's algorithm.

Q3)

Step 1



Step 2



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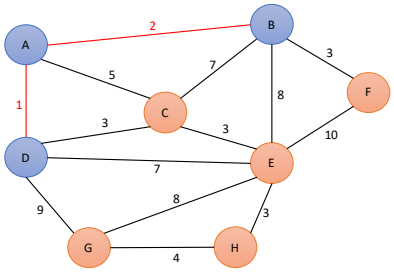
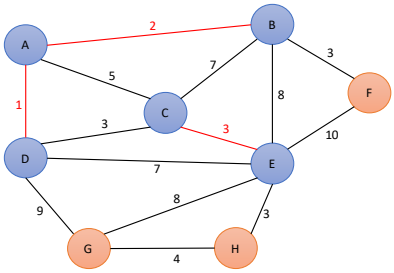
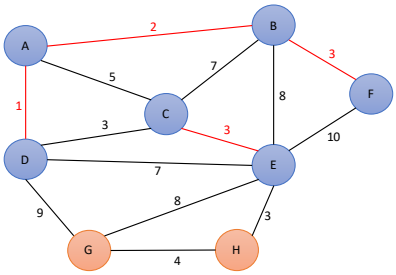
Step 3



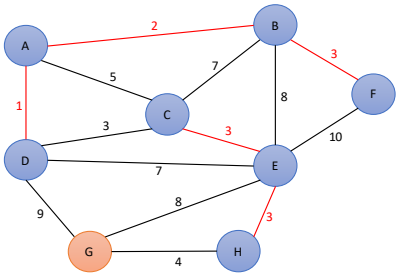
Step 4



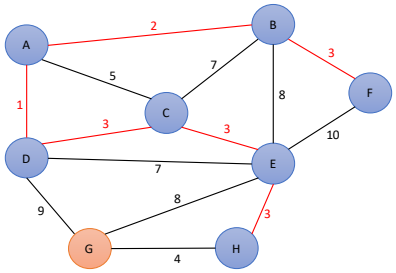
Step 5



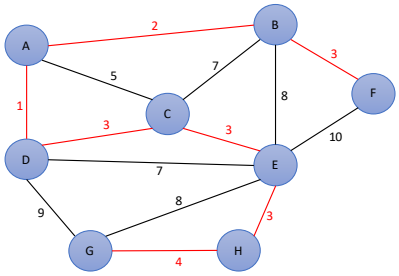
Step 6



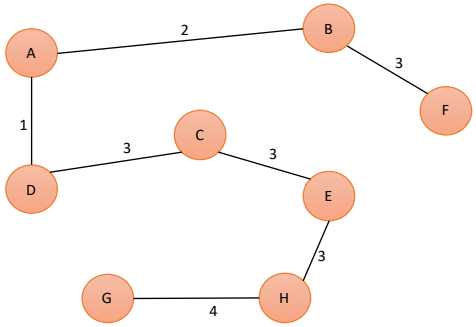
Step 7



Step 8



Step 9



In step 9, we have the minimum spanning tree of Kruskal algorithm.

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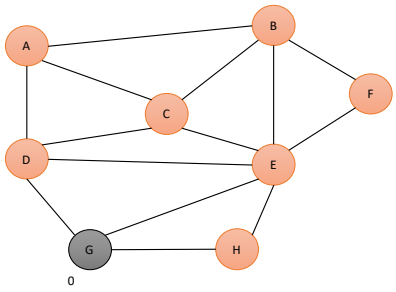
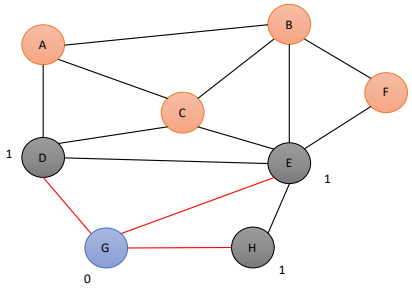
Q4)

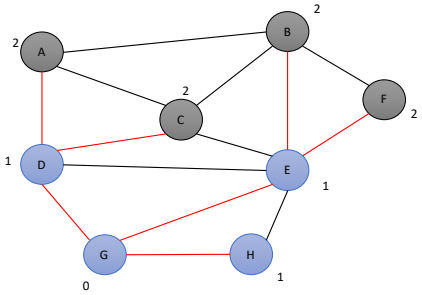
Step 1



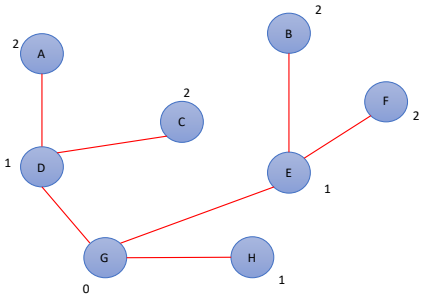
Step 2



Step 3



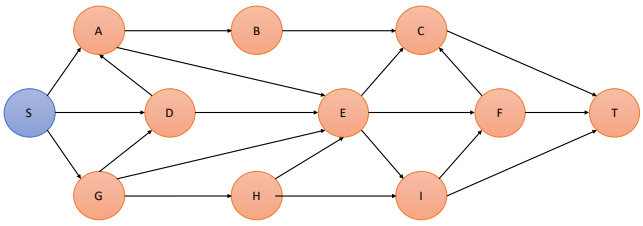
Step 4



By the step 4, we have obtained the breadth-first-search tree

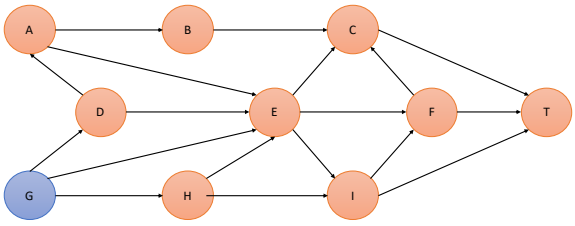
Q5)

Step 1



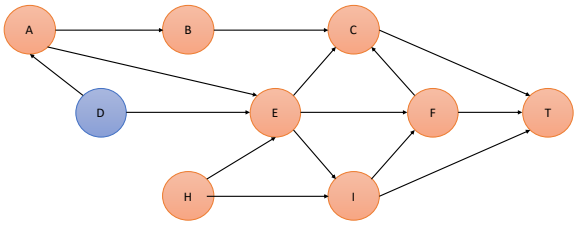
S

Step 2



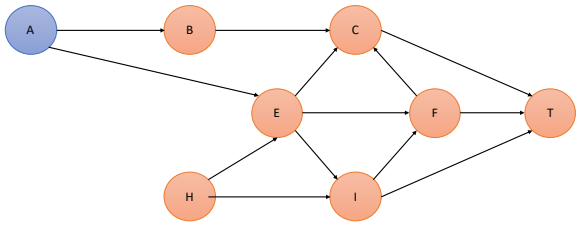
S - G

Step 3



S – G - D

Step 4



S – G – D - A

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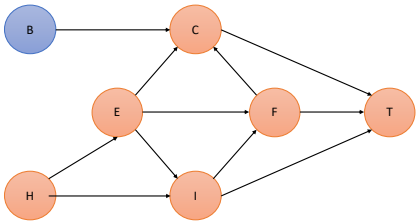
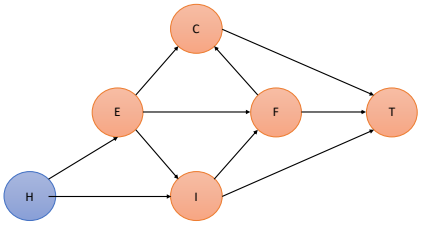
Step 5



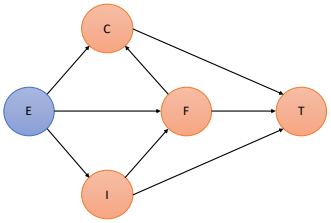
S – G – D - A - B

Step 6



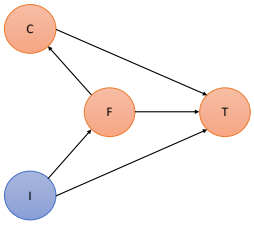
S – G – D - A – B - H

Step 7



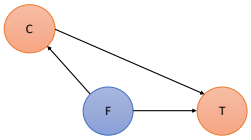
S – G – D - A – B – H - E

Step 8



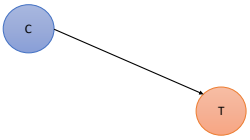
S – G – D - A – B – H – E - I

Step 9



S – G – D - A – B – H – E – I - F

Step 10



S – G – D - A – B – H – E – I – F - C

Step 11

S – G – D - A – B – H – E – I – F – C - T

So, the topological sorted ordering is: S – G – D - A – B – H – E – I – F – C - T