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Tuesday, November 17, 2020 1:49 PM

Kruskal Algorithm to find Minimal Spanning Tree :→

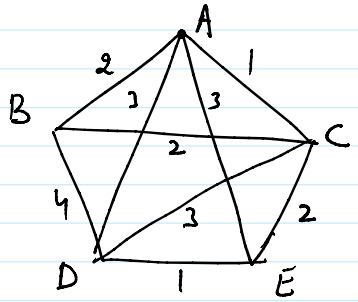
Let G be a Connected graph with n-vertices.

Step-1 :- Write all the edges of graph in increasing Order of their weights.

Step-2 : Select the smallest edge of G.

Step-3 :→ For each successive step select another smallest edge of G, which make no cycle with previous selected edges.

Step-4 :→ Go on repeating step 3 Untill $(n-1)$ edges have been selected.



Ex: Find MST by using Kruskal's Algo.

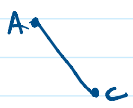
Sol: No. of Vertices $n = 5$

∴ No. of Edges in MST $= n-1 = 5-1 = 4$

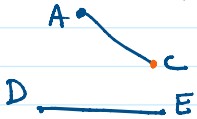
The Edges in Increasing Order of their weights

Weight	1 ✓	1 ✓	2	2	3	3	3	4
Edge	AC	DE	AB	CE	AE	AD	BC	BD

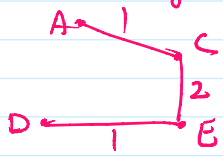
(i) Select AC



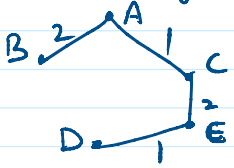
(ii) Select the Edge DE



(iii) Select edge CE

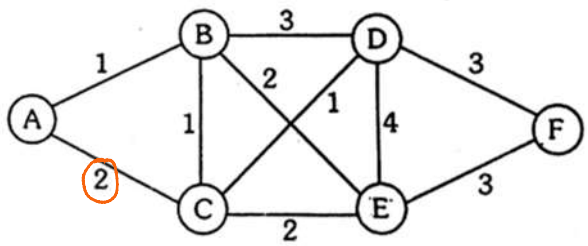


(IV) Select the Edge AB



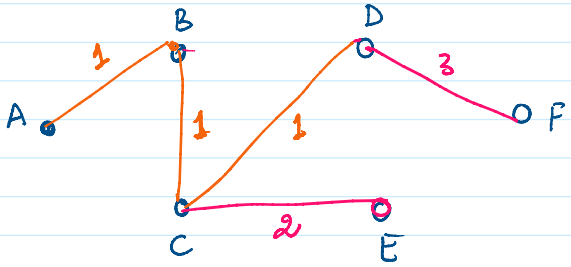
Weight of Tree $= 1+1+2+2 = 6$

Which is Req. MST

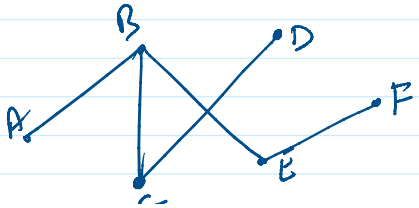


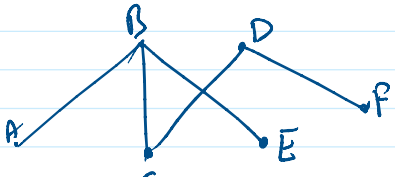
$n = 6$

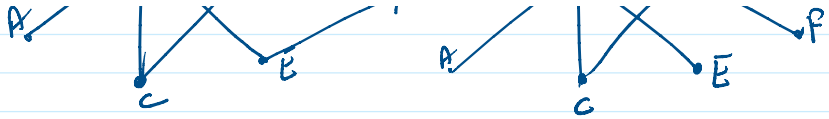
No. of Edges Required $= n-1 = 6-1 = 5$



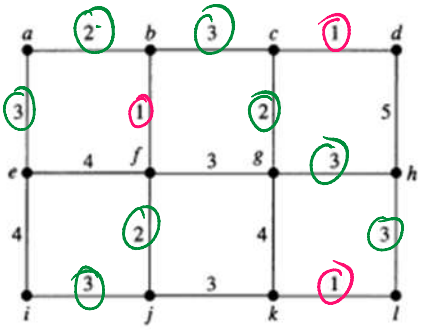
MST Weight $= 1+1+1+2+3 = 8$

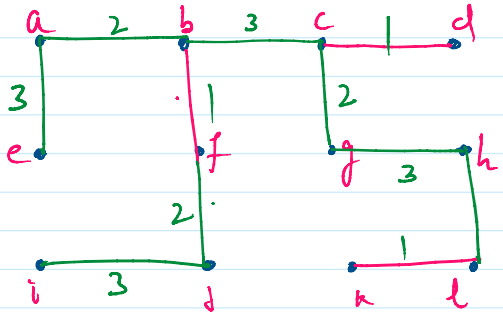






MST Weight = 1+1+1+2+3 = 8





Weight of MST = 24