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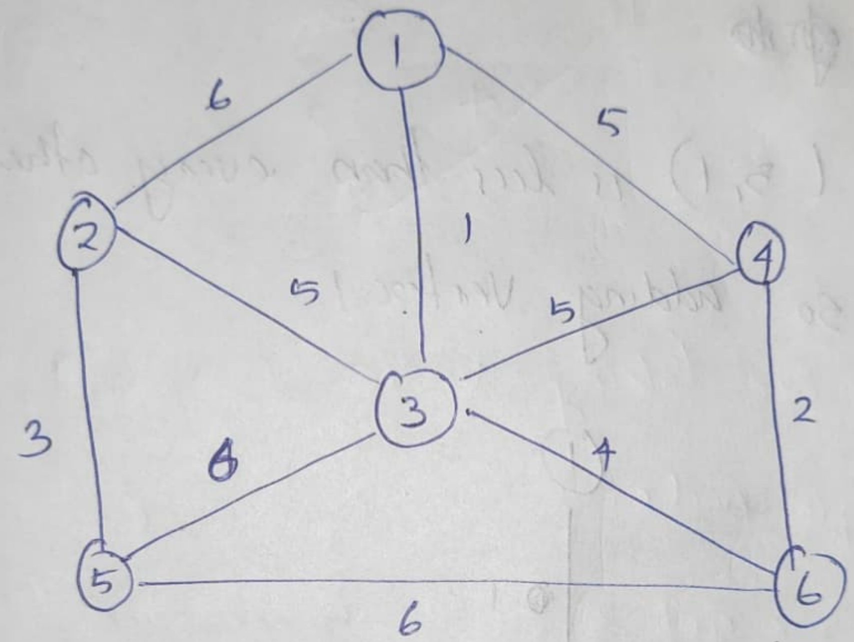
20PMC135

Prim's Algorithm



→ First we have to remove the parallel edges and loops, since there is no parallel edges and loops, we are moving to the next step.

→ choosing arbitrary node. (we can select any node as arbitrary node)

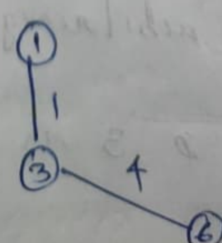
Taking 3 as arbitrary node.

→ checking the outgoing edges of arbitrary node and select the edge with less weight/cost.

Cost (3, 1) is less than every other ~~node~~ edge so adding vertex 1

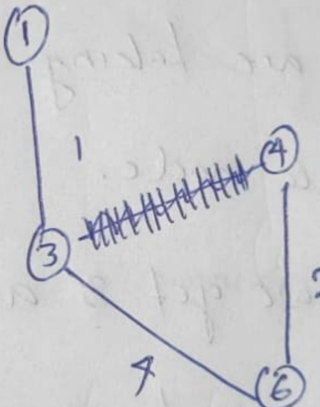
→ Next we have to find out the minimum edges from both vertex 1 and 3.

~~lets~~ cost (3,6) is less than every other edge from vertex 3 and 1



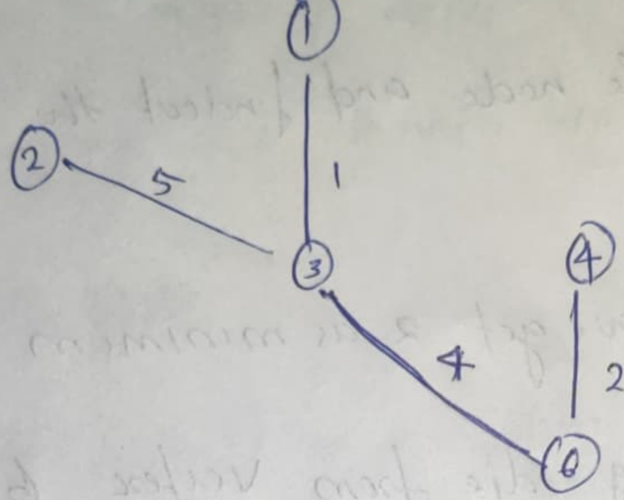
→ Next we have to consider vertices 1, 3, 6 as a single node and findout the lowest cost edie.

Here we get 2 as minimum cost, 2 is a outgoing edie from vertex 6.



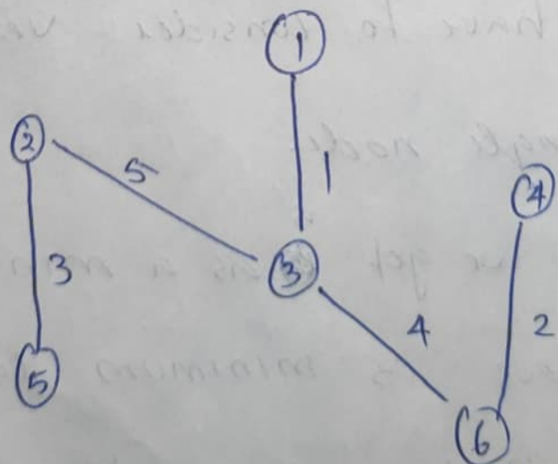
→ Next we have to consider vertices 1, 3, 6, and 4 as a single node.

Now we got 5 as a minimum cost, but here we have 3 minimum cost, we can take any one of the here i'am taking the edie with connects vertex 3 and 2.



→ Next we are taking vertices 1, 3, 6, 4, and 2 as a single node.

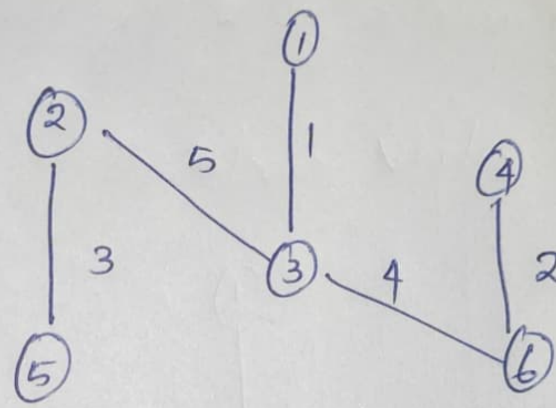
Here we get 3 as a minimum cost, which connects vertex 2 and 5



Now we got same no of ~~edges as~~ vertices as ~~the~~ in the given problem

And got n-1 edies, so stopping the process here.

Final output or minimum Spnning tree.



So cost of minimum Spanning Tree,

= sum of edies

= 1+4+2+5+3

= $\underline{15}$