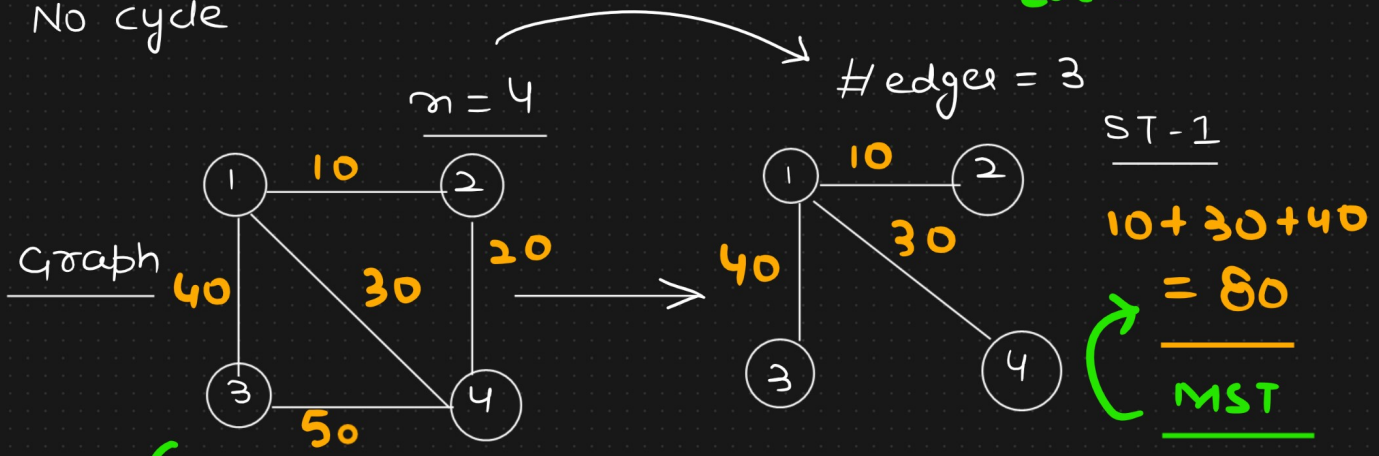
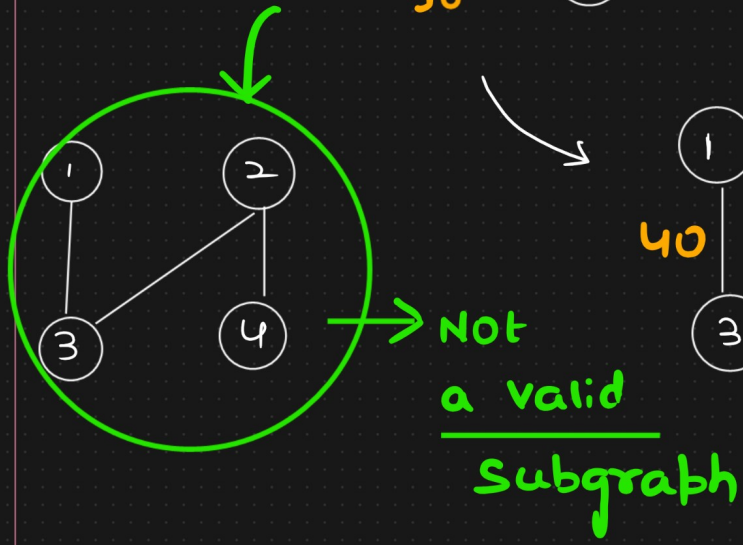
Spanning Tree

Subgraph of graph G → Minimum Spanning Tree

1) all the vertices → available
2) $(n-1)$ edges to connect
   ↳ n = # vertices
3) No cycle

Important properties of spanning tree





Properties

Complete graph → $ST(n) = n^{n-2}$

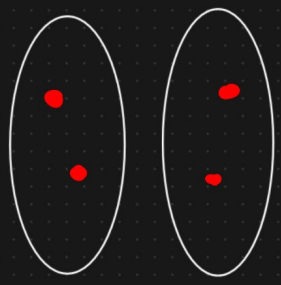
MST → Greedy Algorithms

(Minima) → **Optimizations**

Algorithms
1) Kruskal Algorithm
2) Prim's Algorithm

⟹ Heap Data Structure

Applications → 1) Image Segmentation



2) compute networks