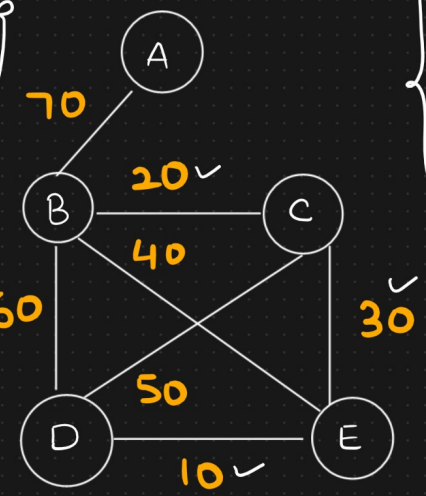
Minimum Spanning Tree

Kruskal Algorithm

Logical understanding



AB — 70, CE — 30
BC — 20, BE — 40
BD — 60, CD — 50
DE → 10

cost = # edges

Worst case scenario

Minheap

(10), 50, 30, 60, 40, 20, 70

1) Min. cost of an edge

Build Minheap = O(E)

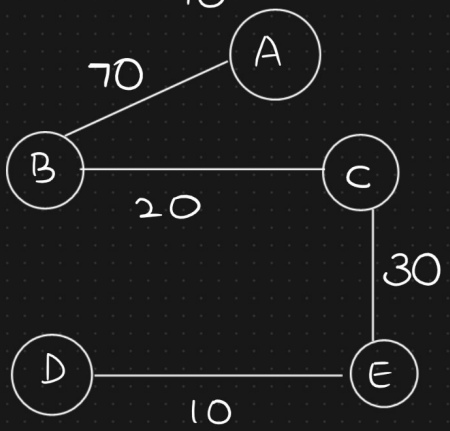
+

Delete the item

↳ minimum element

2

3



Worst case scenario → O(E log E)

Total cost (MST) =

70 + 20 + 30 + 10

⇒ 130

n = 5 ⟷ e = 4

Best case scenario :- $(V-1) \cdot \log E$

$O(V \log E)$

$O(V \log V)$

heapq → Documentation in Python