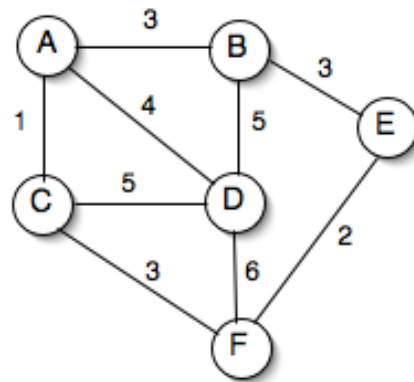


Minimum Spanning Trees:

Find the minimum spanning tree using both Prim's Algorithm and Kruskal's Algorithm.



Prim's

Vertex	Known?	Cost	Previous
A	1	0	---
B	3	3	A
C	2	1	A
D	6	4	A
E	4	3	B
F	5	3, 2	C, E

Kruskal's

List out sorted edges (by weight):

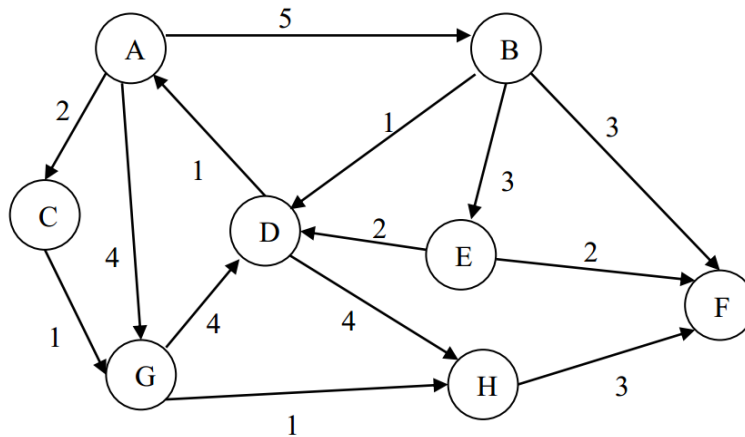
- (A, C)
- (E, F)
- (A, B), (B, E), (C, F)
- (A, D)
- (B, D), (C, D)
- (D, F)

List out edges in MST:

- (A, C) (E, F) (A, B) (B, E) (A, D)

Dijkstra's

Use Dijkstra's Algorithm to evaluate the shortest path from A to any other node in the graph below.



Order vertices marked as known: **A C G H B D F E**

Vertex	Known?	Cost	Path
A	Y	0	-
B	Y	5	A
C	Y	2	A
D	Y	7 6	G B
E	Y	8	B
F	Y	7	H
G	Y	4 3	A C
H	Y	4	G

Runtimes:

Prim's: $O(|E| \log |V|)$

Kruskal's: $O(|E| \log |E|)$
 $O(|E|)$

*sorting

*iterating through edges for union-find

Dijkstra's: $O(|E| \log |V|)$