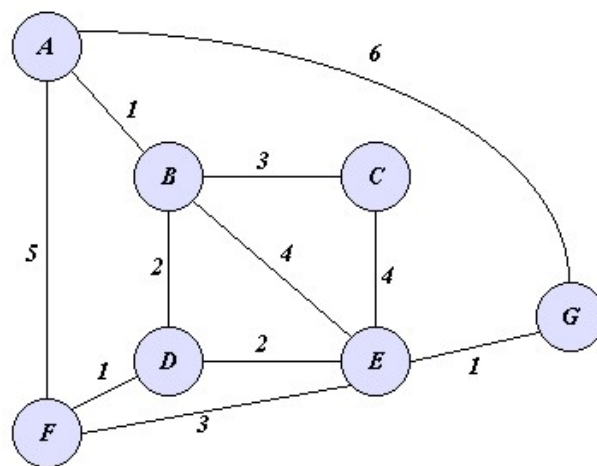


CS4335 Tutorial Week 3

Solution



Kruskal

1. Sorting:

(AB, 1),
(DF, 1),
(EG, 1),
(BD, 2),
(DE, 2),
(BC, 3),
(EF, 3),
(AB, 4),
(CE, 4),
(AF, 5),
(AG, 6).

2. Selection

1. AB
2. DF
3. EG
4. BD
5. DE
6. BC

The Edge set of the MST={AB, DF, EG, BD, DE, BC}

Prim

Node		A	B	C	D	E	F	G
Step 0	Initialization	0/Nil	Inf/Nil	Inf/Nil	Inf/Nil	Inf/Nil	Inf/Nil	Inf/Nil
Step 1	Remove A, update Key/parent		1/A	Inf/Nil	Inf/Nil	Inf/Nil	5/A	6/A
Step 2	Remove B, update Key/parent			3/B	2/B	4/B	5/A	6/A
Step 3	Remove D, update Key/parent			3/B		2/D	1/D	6/A
Step 4	Remove F, update Key/parent			3/B		2/D		6/A
Step 5	Remove E, update Key/parent			3/B				1/E
Step 6	Remove G, update Key/parent			3/B				
Step 7	Remove C							

Step 0: Initialization: SetA=empty, Q={A,B,C,D,E,F,G}

Step 1: SetA=empty, Q={B,C,D,E,F,G}

Step 2: SetA={AB}, Q={C,D,E,F,G}

Step 3: SetA={AB, BD}, Q={C, E, F, G}

Step 4: SetA={AB, BD, FD}, Q={C, E, G}

Step 5: SetA={AB, BD, FD, ED}, Q={C, G}

Step 6: SetA={ AB, BD, FD, ED,GE}, Q={C}

Step 7: SetA={ AB, BD, FD, ED,GE, BC}, Q=empty