

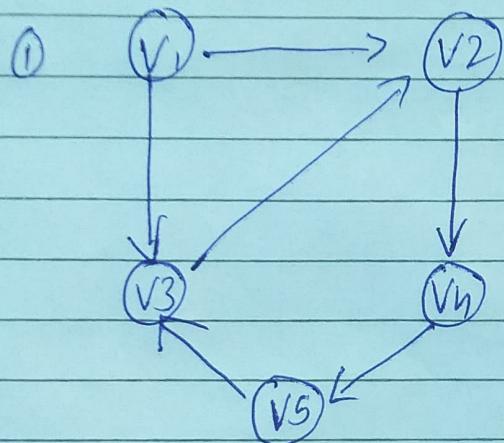
Assignment -2

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Graph

① Unweighted shortest Path Algorithm



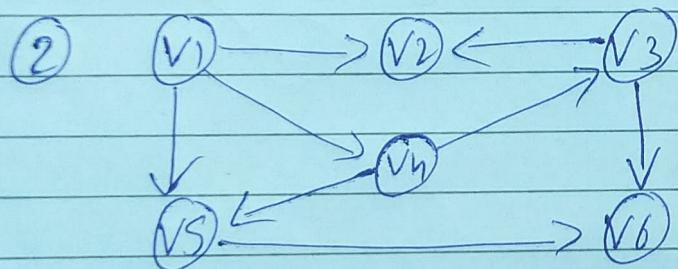
initial state

V	Known	dv	PV
V ₁	0	0	0
V ₂	0	∞	0
V ₃	0	∞	0
V _n	0	∞	0
V _S	0	∞	0

V	Known	dv	PV	V	Known	dv	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	0	1	V ₁	V ₂	1	1	V ₁
V ₃	0	1	V ₁	V ₃	0	1	V ₁
V _n	0	∞	0	V _n	0	2	V _n
V _S	0	∞	0	V _S	0	0	0

V	Known	dv	P	V	Known	dv	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	1	1	V ₁	V ₂	1	1	V ₁
V ₃	1	1	V ₁	V ₃	1	1	V ₁
V _n	0	2	V _n	V _n	1	2	V _n
V _S	0	∞	0	V _S	1	3	V _n

v	known	dv	PV
v_1	1	0	0
v_2	1	1	v_1
v_3	1	1	v_1
v_h	1	2	v_h
v_s	1	3	v_h



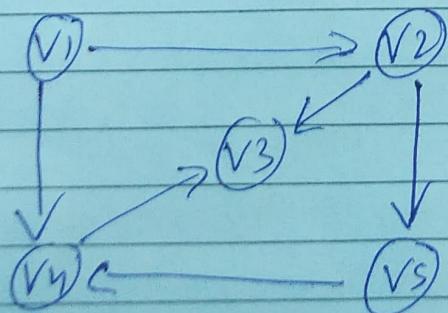
v	initial value	known	dv	PV
v_1	0	0	0	0
v_2	0	0	∞	0
v_3	0	0	∞	0
v_h	0	0	∞	0
v_s	0	0	∞	0
v_6	0	0	∞	0

v	known	dv	PV	v	known	dv	PV
v_1	1	0	0	v_1	1	0	0
v_2	0	1	v_1	v_2	1	1	v_1
v_3	0	∞	0	v_3	0	∞	0
v_h	0	1	v_1	v_h	0	1	v_1
v_s	0	1	v_1	v_s	0	1	v_1
v_6	0	∞	0	v_6	0	∞	0

V	Known	dV	PV	V	Known	dV	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	1	1	V ₁	V ₂	1	1	V ₁
V ₃	0	2	V _h	V ₃	0	2	V _h
V _h	1	1	V ₁	V _h	1	1	V ₁
V _S	0	1	V ₁	V _S	1	1	V ₁
V ₆	0	∞	0	V ₆	0	2	V _S

V	Known	dV	PV	V	Known	dV	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	1	1	V ₁	V ₂	1	1	V ₁
V ₃	1	2	V _h	V ₃	1	2	V _h
V _h	1	1	V ₁	V _h	1	1	V ₁
V _S	1	1	V ₁	V _S	1	1	V ₁
V ₆	0	2	V _S	V ₆	1	2	V _S

(3)



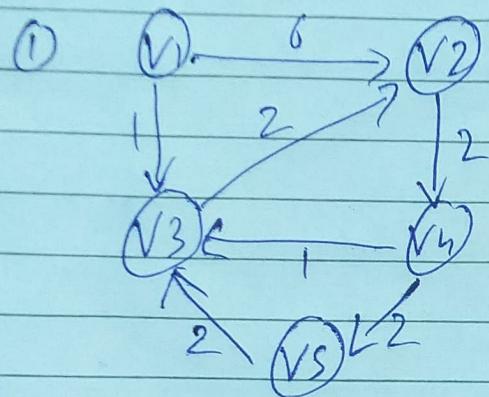
initial table

V	Known	dV	PV
V ₁	0	0	0
V ₂	0	∞	0
V ₃	0	∞	0
V _h	0	∞	0
V _S	0	∞	0

V	Known	dv	PV	V	Known	dv	PV
v_1	1	0	0	v_1	1	0	0
v_2	1	1	v_1	v_2	1	1	v_1
v_3	0	1	v_1	v_3	1	1	v_1
v_n	0	1	v_1	v_n	0	1	v_1
v_s	0	2	v_2	v_s	0	2	v_2

V	Known	dv	PV	V	Known	dv	PV
v_1	1	0	0	v_1	1	0	0
v_2	1	1	v_1	v_2	1	1	v_1
v_3	1	1	v_1	v_3	1	1	v_1
v_n	1	1	v_1	v_n	1	1	v_1
v_s	0	2	v_2	v_s	1	2	v_2

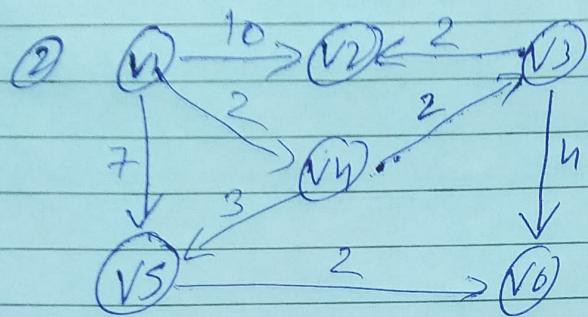
② Weighted shortest Path Algorithm (Dijkstra)



V	known	dv	PV
V1	0	0	0
V2	0	0	0
V3	0	∞	0
V4	0	∞	0
VS	0	∞	0

V	known	dv	PV	V	known	dv	PV
V1	1	0	0	V1	1	0	0
V2	0	1	V1	V2	0	3	V3
V3	0	1	V1	V3	1	1	V1
V4	0	∞	0	V4	0	∞	0
VS	0	∞	0	VS	0	∞	0

V	known	dv	PV	V	known	dv	PV
V1	1	0	0	V1	1	0	0
V2	1	3	V3	V2	1	3	V3
V3	1	1	V1	V3	1	1	V1
V4	0	5	V2	V4	1	5	V2
VS	0	∞	0	VS	0	7	V4

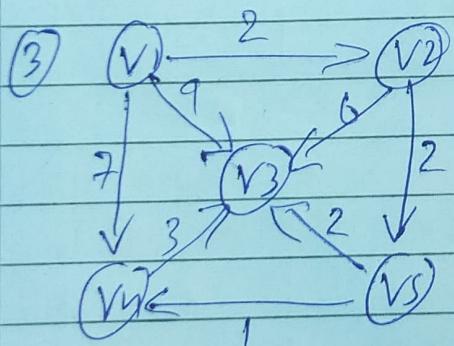


Initial table	
V	Known
V1	0
V2	0
V3	0
Vh	0
VS	0
V6	0

V	Known	dv	PV	V	Known	dv	PV
V1	1	0	0	V1	1	0	0
V2	0	10	V1	V2	0	10	V1
V3	0	∞	0	V3	0	h	Vh
Vh	0	2	V1	Vh	1	2	V1
VS	0	7	V1	VS	0	5	Vh
V6	0	∞	0	V6	0	∞	0

V	Known	dv	PV	V	Known	dv	PV
V1	1	0	0	V1	1	0	0
V2	0	6	V3	V2	0	6	V3
V3	1	h	Vh	V3	1	h	Vh
Vh	1	2	V1	Vh	1	2	V1
VS	0	5	Vh	VS	1	5	Vh
V6	0	8	V3	V6	0	7	VS

V	Known	dV	PV	V	Known	dV	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	0	6	V ₃	V ₂	1	6	V ₃
V ₃	1	4	V _n	V ₃	1	4	V _n
V _n	1	2	V ₁	V _n	1	2	V ₁
V _S	1	5	V _n	V _S	1	5	V _n
V ₆	1	7	V _S	V ₆	1	7	V _S



initial table

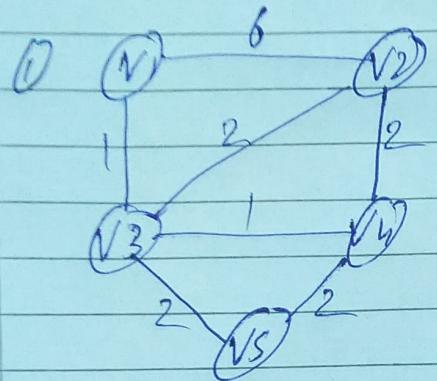
V	Known	dV	PV
V ₁	0	0	0
V ₂	0	∞	0
V ₃	0	∞	0
V _n	0	∞	0
V _S	0	∞	0

V	Known	dV	PV	V	Known	dV	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	0	2	V ₁	V ₂	1	2	V ₁
V ₃	0	9	V ₁	V ₃	0	6	V ₂
V _n	0	7	V ₁	V _n	0	7	V ₁
V _S	0	∞	0	V _S	0	4	V ₂

V	Known	dV	PV	V	Known	dV	PV
V ₁	1	0	0	V ₁	1	0	0
V ₂	1	2	V ₁	V ₂	1	2	V ₁
V ₃	0	6	V ₂	V ₃	0	6	V ₂
V ₄	0	5	V ₃	V ₄	1	5	V ₃
V ₅	1	h	V ₂	V ₅	1	h	V ₂

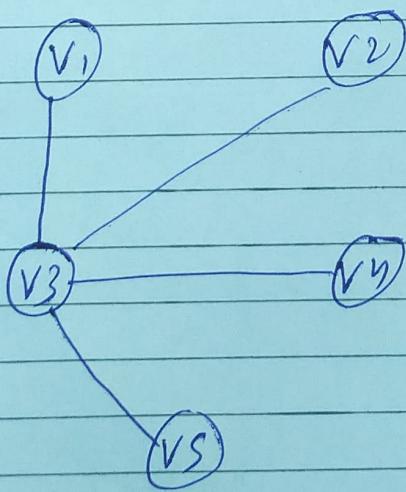
V	Known	dV	PV
V ₁	1	0	0
V ₂	1	2	V ₁
V ₃	1	6	V ₂
V ₄	1	5	V ₃
V ₅	1	h	V ₂

③ Krushkal's Minimum spanning Tree Algorithm

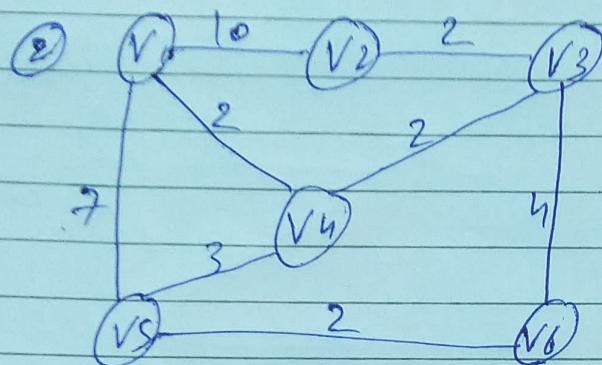


(V_1, V_3)
 (V_2, V_4)
 (V_3, V_2)
 (V_3, V_5)
 (V_4, V_5)
 (V_4, V_2)
 (V_1, V_2)

Accepted
 Accepted
 Accepted
 Accepted
 Rejected
 Rejected
 Rejected.

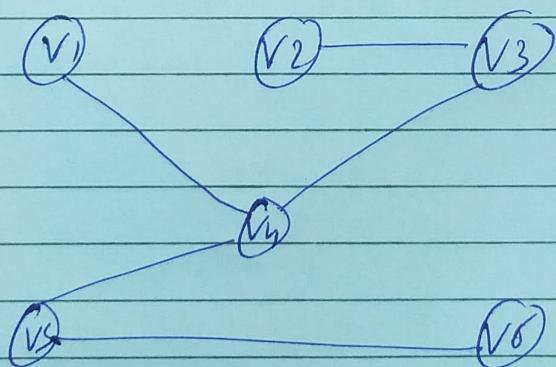


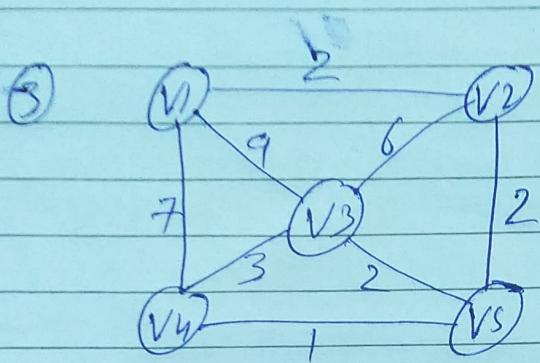
Minimum Spanning tree



(v_2, v_3)
 (v_1, v_4)
 (v_4, v_3)
 (v_5, v_6)
 (v_5, v_4)
 (v_3, v_6)
 (v_1, v_5)
 (v_1, v_2)

Accepted
 Accepted
 Accepted
 Accepted
 Accepted
 Accepted
 Rejected
 Rejected
 Rejected





(V_1, V_5)
 (V_1, V_2)
 (V_3, V_5)
 (V_2, V_5)
 (V_3, V_4)
 (V_3, V_2)
 (V_1, V_4)

Accepted
 Accepted
 Accepted
 Accepted
 Rejected
 Rejected
 Rejected

