

Starting State

Multimap: (0,0)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Backedge	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Visit Node 0: Insert 2 and 11

Multimap: (1:2)(7:11)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	7
Backedge	NULL	NULL	(0,2)	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	(0,11)

Visit Node 2: Insert 9

Multimap: (7:11)(13:9)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	-1	1	-1	-1	-1	-1	-1	-1	13	-1	7
Backedge	NULL	NULL	(0,2)	NULL	NULL	NULL	NULL	NULL	NULL	(2,9)	NULL	(0,11)

Visit Node 11: Insert 1 and 4

Multimap: (9:4)(13:9)(41:1)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	-1	9	-1	-1	-1	-1	13	-1	7
Backedge	NULL	(11,1)	(0,2)	NULL	(11,4)	NULL	NULL	NULL	NULL	(2,9)	NULL	(0,11)

Visit Node 4: Insert 8 and 6

Multimap: (10:8)(13:9)(18:6)(41:1)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	-1	9	-1	18	-1	10	13	-1	7
Backedge	NULL	(11,1)	(0,2)	NULL	(11,4)	NULL	(4,6)	NULL	(4,8)	(2,9)	NULL	(0,11)

Visit Node 8: Insert 10 and 3; Update 9 and 6

Multimap: (11:10)(12:9)(13,6)(41:1)(43:3)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	43	9	-1	13	-1	10	12	11	7
Backedge	NULL	(11,1)	(0,2)	(8,3)	(11,4)	NULL	(8,6)	NULL	(4,8)	(8,9)	(8,10)	(0,11)

Visit Node 10: No updates

Multimap: (12:9)(13,6)(41:1)(43:3)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	43	9	-1	13	-1	10	12	11	7
Backedge	NULL	(11,1)	(0,2)	(8,3)	(11,4)	NULL	(8,6)	NULL	(4,8)	(8,9)	(8,10)	(0,11)

Visit Node 9: Update 3.

Multimap: (13,6)(20:3)(41:1)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	20	9	-1	13	-1	10	12	11	7
Backedge	NULL	(11,1)	(0,2)	(9,3)	(11,4)	NULL	(8,6)	NULL	(4,8)	(8,9)	(8,10)	(0,11)

Visit Node 6: Insert 7 and 5.

Multimap: (14:5)(14:7)(20:3)(41:1)

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	20	9	14	13	14	10	12	11	7
Backedge	NULL	(11,1)	(0,2)	(9,3)	(11,4)	(6,5)	(8,6)	(6,7)	(4,8)	(8,9)	(8,10)	(0,11)

Visit nodes 5, 7, 3 and 1 – No further updates

Node	0	1	2	3	4	5	6	7	8	9	10	11
Distance	0	47	1	20	9	14	13	14	10	12	11	7
Backedge	NULL	(11,1)	(0,2)	(9,3)	(11,4)	(6,5)	(8,6)	(6,7)	(4,8)	(8,9)	(8,10)	(0,11)