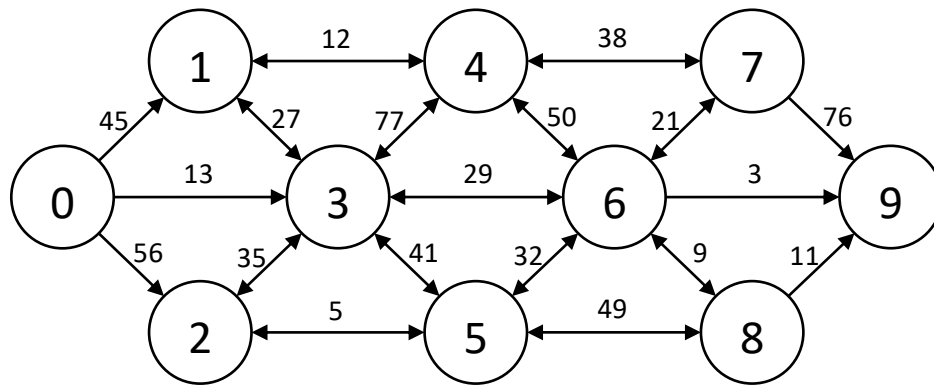


### Example of Dijkstra's Algorithm for C Program



Node	0	1	2	3	4	5	6	7	8	9
	0	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$
0	0	45,0	56,0	13,0	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$
3	0	40,3	48,3	13,0	90,3	54,3	42,3	$\infty$	$\infty$	$\infty$
1	0	40,3	48,3	13,0	52,1	54,3	42,3	$\infty$	$\infty$	$\infty$
6	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6
9	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6
2	0	40,3	48,3	13,0	52,1	53,2	42,3	63,6	51,6	45,6
4	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6
5	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6
7	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6
8	0	40,3	48,3	13,0	52,1	54,3	42,3	63,6	51,6	45,6

Path	Cost
0	0
0 - 3 - 1	40
0 - 3 - 2	48
0 - 3	13
0 - 3 - 1 - 4	52
0 - 3 - 2 - 5	53
0 - 3 - 6	42
0 - 3 - 6 - 7	63
0 - 3 - 6 - 8	51
0 - 3 - 6 - 9	45

```
int report_graph[10][10] = {
    { 0, 45, 56, 13, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY },
    { INFINITY, 0, INFINITY, 27, 12, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY },
    { INFINITY, INFINITY, 0, 35, INFINITY, 5, INFINITY, INFINITY, INFINITY, INFINITY },
    { INFINITY, 27, 35, 0, 77, 41, 29, INFINITY, INFINITY, INFINITY },
    { INFINITY, 12, INFINITY, 77, 0, INFINITY, 50, 38, INFINITY, INFINITY },
    { INFINITY, INFINITY, 5, 41, INFINITY, 0, 32, INFINITY, 49, INFINITY },
    { INFINITY, INFINITY, INFINITY, 29, 50, 32, 0, 21, 9, 3 },
    { INFINITY, INFINITY, INFINITY, INFINITY, 38, INFINITY, 21, 0, INFINITY, 76 },
    { INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, 49, 9, INFINITY, 0, 11 },
    { INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, INFINITY, 0 } };
```

This is the mathematical expression of this graph for our Dijkstra's Algorithm program. It's a two dimensional integer array. The elements represent edges. From up to down, vertices are aligned. First row has first vertex's edges. 0 represent center of vertex. INFINITY represents impossibility for edges. Our Dijkstra's Algorithm program accepts number 9999 for infinity value.