

APSP.C - Code::Blocks 20.03

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<global>

nonRecursiveBinarySearch.c quick_sort.c MERGE_SORT.C PRIMS_ALGO.C KRUSKALS_ALGO.C APSP.C

```
1 // BE2005F062 AKASH SHRIDHARAN
2 #include<stdio.h>
3
4 #define V 4
5
6 #define INF 99999
7
8 void printSolution(int dist[][V]);
9
10 void floydWarshall (int graph[][V])
11 {
12
13     int dist[V][V], i, j, k;
14
15     for (i = 0; i < V; i++)
16         for (j = 0; j < V; j++)
17             dist[i][j] = graph[i][j];
18     for (k = 0; k < V; k++)
19     {
20         for (i = 0; i < V; i++)
21         {
22             for (j = 0; j < V; j++)
23             {
24                 if (dist[i][k] + dist[k][j] < dist[i][j])
25                     dist[i][j] = dist[i][k] + dist[k][j];
26             }
27         }
28     }
29     printSolution(dist);
30 }
31
32 void printSolution(int dist[][V])
33 {
34     printf ("The following matrix shows the shortest distances"
35            " between every pair of vertices\n");
36     for (int i = 0; i < V; i++)
```

C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 33, Pos 32 Insert Read/Write defa...

C:\Users\akash\Desktop\5th_sem_books&PPTs\DAA\lab-works\APSP.exe

The following matrix shows the shortest distances between every pair of vertices

0	5	8	9
INF	0	3	4
INF	INF	0	1
INF	INF	INF	0

Process returned 0 (0x0) execution time : 0.084 s
Press any key to continue.

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```
26 }
27 }
28 }
29 printSolution(dist);
30 }
31
32 void printSolution(int dist[][V])
33 {
34     printf ("The following matrix shows the shortest distances"
35            " between every pair of vertices \n");
36     for (int i = 0; i < V; i++)
37     {
38         for (int j = 0; j < V; j++)
39         {
40             if (dist[i][j] == INF)
41                 printf("%5s", "INF");
42             else
43                 printf ("%5d", dist[i][j]);
44         }
45         printf("\n");
46     }
47 }
48
49 int main()
50 {
51     int graph[V][V] = { {0, 5, INF, 10},
52                        {INF, 0, 3, INF},
53                        {INF, INF, 0, 1},
54                        {INF, INF, INF, 0}
55     };
56     floydWarshall(graph);
57     return 0;
58 }
59
60
```

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