



Subject :

DAA LAB

Software : Ubuntu

Hardware : Core i5

Branch : CSE

Semester : 4th

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Prog No. 08

PROBLEM STATEMENT

ALGORITHM & CODE :

Write a program to solve All-Pairs Shortest Paths Problem using Floyd's algorithm.

```
#include <stdio.h>
#define max 100
#define INF 99999

void FloydWarshall (int graph [max] [max], int n)
{
    int dist [max] [max], i, j, k;
    for (i = 0; i < n; i++)
        for (j = 0; j < n; j++)
            dist [i] [j] = graph [i] [j];
    for (k = 0; k < n; k++)
    {
        for (i = 0; i < n; i++)
        {
            for (j = 0; j < n; j++)
            {
                if (dist [i] [k] + dist [k] [j] < dist [i] [j])
                    dist [i] [j] = dist [i] [k] + dist [k] [j];
            }
        }
    }
}
```

printf ("The following matrix shows the shortest distances between every pair of vertices :\n");

```
for (i = 0; i < n; i++)
{
    for (j = 0; j < n; j++)
```

INPUT GIVEN

OUTPUT OBTAINED

REMARKS

GRADE :

Signature of Faculty

Date :

Signature of Student Reddanna Sathya

Date : 10/04/2025



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ALGORITHM STATEMENT

ALGORITHM & CODE :

```
{
    if (dist[i][j] == INF)
        printf ("%07s", "INF");
    else
        printf ("%07d", dist[i][j]);
}
printf ("\n");
}
}

int main()
{
    int graph [MAX][MAX];
    int n, i, j;
    printf ("Enter the numbers of vertices in the graph:");
    scanf ("%d", &n);
    printf ("Enter the adjacency matrix (use %d for infinity): \n", INF);
    for (i=0; i<n; i++)
    {
        for (j=0; j<n; j++)
        {
            scanf ("%d", &graph[i][j]);
            if (i == j) graph[i][j] = 0; // Distance from vertex to itself is 0.
        }
    }
}
```

INPUT GIVEN

OUTPUT OBTAINED

REMARKS

GRADE :

Signature of Faculty

Date :

Signature of Student Sudhanshu Sahoo

Date : 10/04/2025



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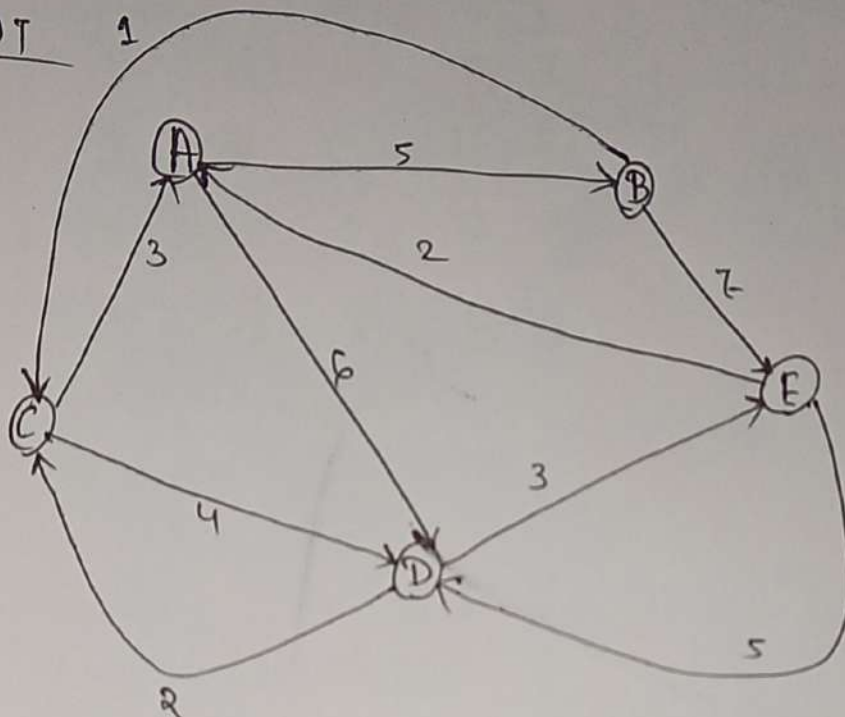
Prog No. 08

PROBLEM STATEMENT

ALGORITHM & CODE :

```
floydWarshall (graph, n);  
return 0;  
}
```

INPUT



Output

Enter the number of vertices in the graph: 5

Enter the adjacency matrix (use 9999 for infinity):

```
0 5 9999 6 9999  
9999 0 1 9999 7  
3 9999 0 4 9999  
9999 9999 2 0 3
```

INPUT GIVEN

2 9999 9999 5 0

OUTPUT OBTAINED

REMARKS

GRADE :

Signature of Faculty

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EM STATEMENT

RITHM & CODE :

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

0	5	6	6	9
4	0	1	5	7
3	8	0	4	7
5	10	2	0	3
2	7	7	5	0

INPUT GIVEN		
OUTPUT OBTAINED		
REMARKS		
GRADE :	Signature of Faculty	Signature of Student <i>Rudranarayan Sahoo</i>
	Date :	Date : 10/04/2025