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Class:	S. Y. B.Tech (Computer Engineering)
Course:	Computer Networks (DJ12CEL405)
Date of Performance:	
Date of Submission:	
Experiment No.:	05
Aim:	Distance Vector Routing using Bellman Ford

AIM: DISTANCE VECTOR ROUTING USING BELLMAN FORD

CODE:

```
#include <stdio.h>
struct node{
    unsigned dist[20];
    unsigned from[20];
} rt[10];
int main(){
    int dmat[20][20];
    int n, i, j, k, count = 0;
    printf("\nEnter the number of nodes : ");
    scanf("%d", &n);
    printf("\nEnter the cost matrix :\n");
    for (i = 0; i < n; i++)
        for (j = 0; j < n; j++)        {
            scanf("%d", &dmat[i][j]);
            dmat[i][i] = 0;
            rt[i].dist[j] = dmat[i][j];
            rt[i].from[j] = j;
        }
    do
    {
        count = 0;
        for (i = 0; i < n; i++)
            for (j = 0; j < n; j++)
                for (k = 0; k < n; k++)
                    if (rt[i].dist[j] > dmat[i][k] +
rt[k].dist[j])                    {
                        rt[i].dist[j] = rt[i].dist[k] + rt[k].dist[j];
                        rt[i].from[j] = k;
                        count++;
```

```
                    }
    } while (count != 0);
    for (i = 0; i < n; i++)    {
        printf("\n\nState value for router %d is \n", i + 1);
        for (j = 0; j < n; j++)        {
            printf("\t\nnode %d via %d Distance%d", j + 1, rt[i].from[j] + 1,
rt[i].dist[j]);
        }
    }
    printf("\n\n");
}
```

OUTPUT:

```
n-i4cwrjjx.cyd' '--stdout=Microsoft-MIEngine-Out-rjtptuzu.44c' '--stderr=Microsoft-MIEngine-Error-3
yjpnon1.bcw' '--pid=Microsoft-MIEngine-Pid-mmt3fsj2.g1f' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '
--interpreter=mi'

Enter the number of nodes : 4

Enter the cost matrix :
0 3 5 99
3 0 99 1
5 4 0 2
99 1 2 0


State value for router 1 is

node 1 via 1 Distance0
node 2 via 2 Distance3
node 3 via 3 Distance5
node 4 via 2 Distance4

State value for router 2 is

node 1 via 1 Distance3
node 2 via 2 Distance0
node 3 via 4 Distance3
node 4 via 4 Distance1

State value for router 3 is

node 1 via 1 Distance5
node 2 via 4 Distance3
node 3 via 3 Distance0
node 4 via 4 Distance2

State value for router 4 is

node 1 via 2 Distance4
node 2 via 2 Distance1
node 3 via 3 Distance2
node 4 via 4 Distance0

PS C:\Users\Jadhav\Desktop\BTech\4th sem\CN\Code>
```