Date : 20-10-22

Experiment No. 7

1) Write and execute a program for distance vector algorithm to find the suitable path for transmission between sender and receiver.

```
#include <stdio.h>
struct node
{
  int dist[20];
  int from[20];
} route[10];

int main()
{
int dm[20][20], n;
printf("Enter the number of nodes:\n");
scanf("%d", &n);
printf("Enter the distance matrix:\n");
for(int i=0; i<n; i++)
{
  for(int j=0; j<n; j++)
  {
  scanf("%d", &dm[i][j]);
  dm[i][i]=0;
  route[i].dist[j]=dm[i][j];
  route[i].from[j]=j;
  }
}
int flag;
do
{
flag=0;
for(int i=0; i<n; i++)
{
```

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Experiment No. 1

```
for (int j=0; j<n; j++)
{
  for (int k=0; k<n; k++)
  {
    if ((route[i].dist[j]) >
(route[i].dist[k] + route[k].dist[j]))
    {
    route[i].dist[j] = route[i].dist[k] + route[k].
    dist[j];
    route[i].from[i] = k;
    flag = 1;
    }
  }
}
}while(flag);
for(int i=0; i<n; i++)
{
printf("\n Router info for router: %d \n", i+1);
printf("Dest. \t Next Hop \t Dist. \n");
for(int j=0; j<n; j++)
printf("%d \t %d \t %d \n", j+1, route[i].from
[j]+1, route[i].dist[j]);
}
return 0;
}
```

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OUTPUT:

Enter the number of nodes:
3
Enter the distance matrix:
0 1 2
3 0 4
5 6 0

Router info for router : 1

DEst.	Next Hop	Dist.
1	1	0
2	2	1
3	3	2

Router info for router : 2

DEst.	Next Hop	Dist.
1	1	3
2	2	0
3	3	4

Router info for router : 3

DEst.	Next Hop	Dist.
1	1	5
2	2	6
3	3	0