**CODE:**

#include <stdio.h>

#define INFINITY 999

int main()

{

int n;

printf("Enter the number of nodes: ");

scanf("%d", &n);

int cost[n][n];

printf("Enter the cost matrix:\n");

for (int i = 0; i < n; i++)

{

for (int j = 0; j < n; j++)

{

scanf("%d", &cost[i][j]);

}

}

int final[n][n];

for (int i = 0; i < n; i++)

{

for (int j = 0; j < n; j++)

{

final[i][j] = INFINITY;

}

}

for (int i = 0; i < n; i++)

{

for (int j = 0; j < n; j++)

{

if (i != j)

{

for (int k = 0; k < n; k++)

{

int new\_cost = cost[i][k] + cost[k][j];

if (new\_cost < final[i][j])

{

final[i][j] = new\_cost;

}

}

}

}

}

for (int i = 0; i < n; i++)

{

printf("For router %d:\n", i + 1);

for (int j = 0; j < n; j++)

{

int distance = final[i][j];

if (distance == INFINITY)

{

distance = 0;

}

printf("\tnode %d via %d distance is %d\n", j + 1, i + 1, distance);

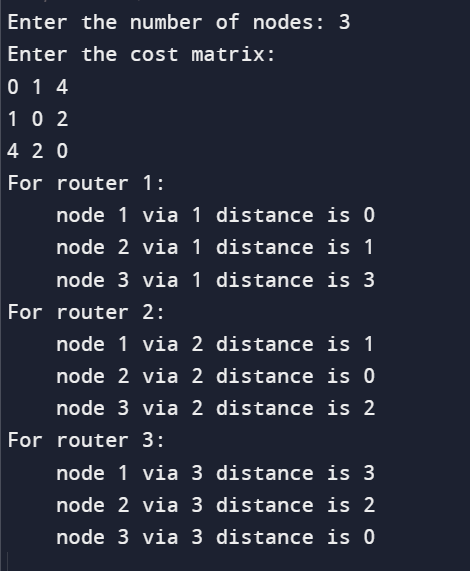
}

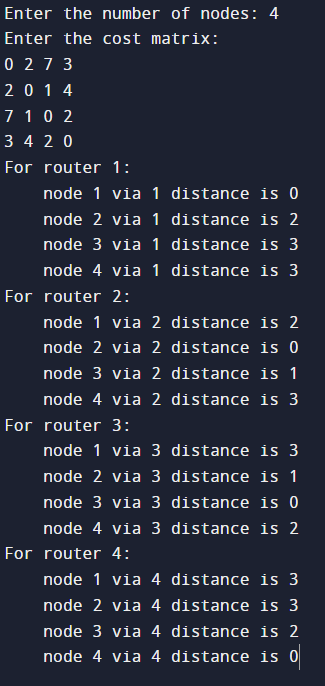
}

return 0;

}

**OUTPUT:**

****

****