Dijitra algorithm program

Program :-

```
#include<stdio.h>
int src, dest[10], cost[10][10], n, vis[10];
void dijkstras()
{
    int i, count, min,u;
    for(i=1;i<=n;i++)
        dest[i]=cost[src][i];
    vis[src]=1;
    count=1;
    while(count<n)
    {
        min=999;
        for(i=1;i<=n;i++)
        {
            if(dest[i]<min && vis[i]==0)
            {
                min=dest[i];
                u=i;
            }
        }
        vis[u]=1;
        for(i=1;i<=n;i++)
        {
            if((dest[u]+cost[u][i])<dest[i] && vis[i]==0)
            {
                dest[i]=dest[u]+cost[u][i];
            }
        }
        count++;
    }
```

```
}

void main()
{
    int i,j;
    printf("Enter number of vertices: ");
    scanf("%d",&n);
    printf("Enter cost adjacency matrix:\n");
    for(i=1;i<=n;i++)
    {
        printf("Enter the row %d: ",i);
        for(j=1;  j<=n; j++)
        {
            scanf("%d",&cost[i][j]);
        }
        printf("\n");
    }
    printf("\nEnter source vertex: ");
    scanf("%d",&src);
    dijkstras();
    printf("\nShortest paths from vertex '%d' is: ",src);
    for(i=1;i<=n;i++)
        printf("\n%d-->%d = %d",src,i,dest[i]);
    return;
}
```

OUTPUT:-

```
Enter number of vertices: 5
Enter cost adjacency matrix:
Enter the row 1: 0 1 5 2 999

Enter the row 2: 1 0 999 999 999

Enter the row 3: 5 999 0 3 999

Enter the row 4: 2 999 3 0 1

Enter the row 5: 999 999 999 1 0


Enter source vertex: 1

Shortest paths from vertex '1' is:
1-->1 = 0
1-->2 = 1
1-->3 = 5
1-->4 = 2
1-->5 = 3

...Program finished with exit code 0
Press ENTER to exit console.
```