5. Implement Dijsktra’s algorithm to compute the shortest path through a network

Program:

#include<stdio.h>

#include<conio.h>

void main()

{

int path[5][5],i,j,min,a[5]

[5],p,st=1,ed=5,stp,edp,t[5],index;

printf("Enter cost matrix \n");

for(i=1;i<=5;i++)

for(j=1;j<=5;j++)

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

printf("Enter total path\n");

scanf("%d",&p);

printf("Enter possible paths\n");

for(i=1;i<=p;i++)

for(j=1;j<=5;j++)

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

for(i=1;i<=p;i++)

{

t[i]=0;

stp=st;

for(j=1;j<=5;j++)

{

edp=path[i][j+1];

t[i]=t[i]+a[stp][edp];

if(edp==ed)

break;

else

stp=edp;

}

}

min=t[st];

index=st;

for(i=1;i<=p;i++)

{

if(min>t[i])

{

min=t[i];

index=i;

}

}

printf("minimum cost %d",min);

printf("\n minimum cost path");

for(i=1;i<=5;i++)

{

printf("---->%d",path[index][i]);

if(path[index][i]==ed)

break;

}

}

Text

Description automatically generated