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1BM19CS224

Implement All Pair Shortest paths problem using Floyd’s algorithm.

#include<stdio.h>

#include<conio.h>

int min(int,int);

void floyds(int p[10][10],int n)

{

int i,j,k;

for(k=1;k<=n;k++)

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

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

if(i==j)

p[i][j]=0;

else

p[i][j]=min(p[i][j],p[i][k]+p[k][j]);

}

int min(int a,int b)

{

if(a<b)

return(a);

else

return(b);

}

void main()

{

int p[10][10],w,n,e,u,v,i,j;;

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

scanf("%d",&n);

printf("\nEnter the number of edges: ");

scanf("%d",&e);

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

{

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

p[i][j]=999;

}

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

{

printf("\nEnter the end vertices of edge %d with its weight \n",i);

scanf("%d%d%d",&u,&v,&w);

p[u][v]=w;

}

floyds(p,n);

printf("\n Matrix of input data:\n");

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

{

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

printf("%d \t",p[i][j]);

printf("\n");

}

printf("\nThe shortest paths are:\n");

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

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

{

if(i!=j)

printf("\n<%d,%d>=%d",i,j,p[i][j]);

}

}

OUTPUT



