FLOYD'S ALGORITHM:

PROGRAM:

```
#include<stdio.h>
#include<conio.h>
int a[10][10],n;
void floyds();
int min(int,int);
void main()
{
 int i,j;

 printf("\nEnter the no. of vertices: ");
 scanf("%d",&n);
 printf("Enter the cost matrix:\n");
 for(i=1;i<=n;i++)
 {
  for(j=1;j<=n;j++)
  {
   scanf("%d",&a[i][j]);
  }
 }
 floyds();
}

void floyds()
{
 int i,j,k;
 for(k=1;k<=n;k++)
 {
  for(i=1;i<=n;i++)
  {
   for(j=1;j<=n;j++)
   {
    a[i][j]=min(a[i][j],a[i][k]+a[k][j]);
   }
  }
 }
 printf("\nAll pair shortest path matrix is:\n");
 for(i=1;i<=n;i++)
 {
  for(j=1;j<=n;j++)
  {
   printf("%d\t",a[i][j]);
  }
  printf("\n\n");
 }
```

```
}

int min(int x,int y)
{
 if(x<y)
 {
  return x;
 }
 else
 {
  return y;
 }
}
```

OUTPUT:

```
User@PRATHIKSHA /c/ada lab
$ cd "/c/ada lab/" && gcc floyds.c -o floyds && "/c/ada lab/"floyds

Enter the no. of vertices: 4
Enter the cost matrix:
0 9999 6 1
4 0 20 10
9999 3 0 12
6 9999 9999 0

All pair shortest path matrix is:
0       9       6       1

4       0       10      5

7       3       0       8

6       15      12      0
```