

```
1  #include<stdio.h>
2  #include<stdlib.h>
3  int a[10][10],n;
4  void floyds();
5  int min(int,int);
6  int main()
7  {
8  int i,j;
9  printf("\n enter the no. of vertices:\t");
10 scanf("%d",&n);
11 printf("\n enter the cost matrix:\n");
12 for(i=1;i<=n;i++)
13 {
14 for(j=1;j<=n;j++)
15 {
16 scanf("%d",&a[i][j]);
17 }
18 }
19 floyds();
20 }
21 void floyds()
22 {
23 int i,j,k;
24 for(k=1;k<=n;k++)
25 {
26 for(i=1;i<=n;i++)
27 {
28 for(j=1;j<=n;j++)
29 {
30 a[i][j]=min(a[i][j],a[i][k]+a[k][j]);
31 }
32 }
33 }
34 printf("\n all pair shortest path matrix is:\n").
```


main.c

```
34  printf("\nall pair shortest path matrix is:\n");
35  for(i=1;i<=n;i++)
36  {
37  for(j=1;j<=n;j++)
38  {
39  printf("%d\t",a[i][j]);
40  }
41  printf("\n\n");
42  }
43  }
44  int min(int x,int y)
45  {
46  if(x<y)
47  {
48  return x;
49  }
50  else
51  {
52  return y;
53  }
54  }
```


❖ clang-7 -pthread -lm -o main main.c

❖ ./main

enter the no. of vertices: 4

enter the cost matrix:

| | | | |
|------|------|------|------|
| 9999 | 9999 | 3 | 9999 |
| 2 | 9999 | 9999 | 9999 |
| 9999 | 7 | 9999 | 1 |
| 6 | 9999 | 9999 | 9999 |

all pair shortest path matrix is:

| | | | |
|----|----|---|---|
| 10 | 10 | 3 | 4 |
|----|----|---|---|

| | | | |
|---|----|---|---|
| 2 | 12 | 5 | 6 |
|---|----|---|---|

| | | | |
|---|---|----|---|
| 7 | 7 | 10 | 1 |
|---|---|----|---|

| | | | |
|---|----|---|----|
| 6 | 16 | 9 | 10 |
|---|----|---|----|

❖ []