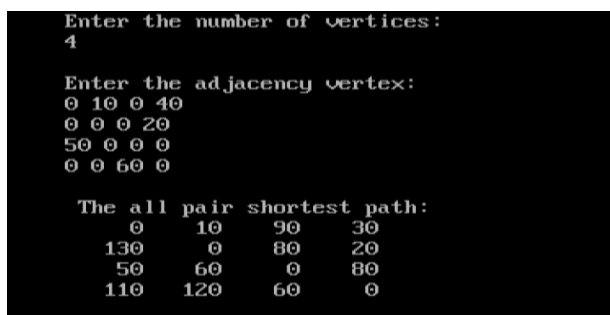


8. Write a Program to implement Floyd's algorithm and find the lengths of the shortest paths from every pairs of vertices in a given weighted graph

```
#include<stdio.h>
int c[5][5],n,i,j,k;
void floyd()
{
    for(k=1;k<=n;k++)
        for(i=1;i<=n;i++)
            for(j=1;j<=n;j++)
                if(c[i][k]+c[k][j]<c[i][j])
                    c[i][j]=c[i][k]+c[k][j];
}

void main()
{
    printf("Enter the number of vertices: \n");
    scanf("%d",&n);
    printf("\nEnter the adjacency vertex:\n");
    for(i=1;i<=n;i++)
        for(j=1;j<=n;j++)
        {
            scanf("%d",&c[i][j]);
            if(c[i][j]==0)
                c[i][j]=999;
        }
    floyd();
    for(i=1;i<=n;i++)
        c[i][i]=0;
    printf("\n The all pair shortest path: \n");
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=n;j++)
            printf("%6d",c[i][j]);
        printf("\n");
    }
    getch();
}
```

Output



```
Enter the number of vertices:
4

Enter the adjacency vertex:
0 10 0 40
0 0 0 20
50 0 0 0
0 0 60 0

The all pair shortest path:
0      10     90     30
130    0      80     20
50     60     0      80
110    120    60     0
```