

WEEK 7

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

CODE:

```
#include<stdio.h>

void main()
{
    int i,j,k,n,p[10][10],o[10][10];

    printf("Enter number of nodes \n");
    scanf("%d",&n);

    printf("Enter %dX%d adjacency matrix of \n",n,n);
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
            scanf("%d",&p[i][j]);
    }

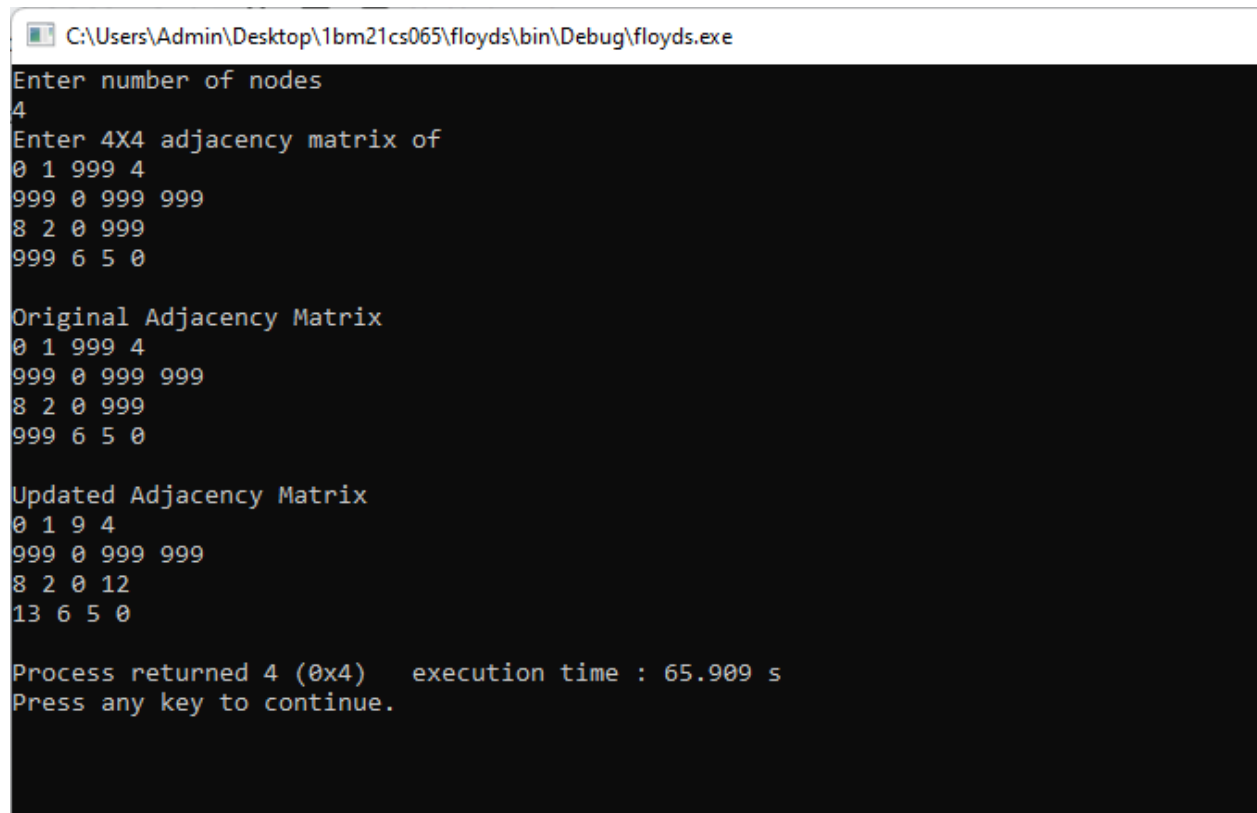
    for(i=0;i<n;i++)
    for(j=0;j<n;j++)
        o[i][j]=p[i][j];

    for(k=0;k<n;k++)
    for(i=0;i<n;i++)
    for(j=0;j<n;j++)
        if(p[i][j] > p[k][j]+p[i][k])
            p[i][j]=p[k][j]+p[i][k];

    printf("\nOriginal Adjacency Matrix \n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
            printf("%d ",o[i][j]);
        printf("\n");
    }
}
```

```
printf("\nUpdated Adjacency Matrix \n");
for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
        printf("%d ",p[i][j]);
    printf("\n");
}
```

OUTPUT:



```
C:\Users\Admin\Desktop\1bm21cs065\floyds\bin\Debug>floyds.exe
Enter number of nodes
4
Enter 4X4 adjacency matrix of
0 1 999 4
999 0 999 999
8 2 0 999
999 6 5 0

Original Adjacency Matrix
0 1 999 4
999 0 999 999
8 2 0 999
999 6 5 0

Updated Adjacency Matrix
0 1 9 4
999 0 999 999
8 2 0 12
13 6 5 0

Process returned 4 (0x4)   execution time : 65.909 s
Press any key to continue.
```