Practical No :- 10 Write a program to find shortest path using all pair path.

```
#include<iostream>
#include<conio.h>
using namespace std;
int i,j,k,n,COST[100][100],A[100][100];
class Allpaths
{
public:
void Getdata();
void All_paths();
}a;
void Allpaths::Getdata()
{
cout<<"\n\n Enter the no of nodes :-";
cin>>n;
cout<<"\n\n Enter the cost matrix :-";
for(i=1;i<=n;i++)
for(j=1;j<=n;j++)
        cin>>COST[i][j];
}
void Allpaths::All_paths()
{
for(i=1;i<=n;i++)
        for(j=1;j<=n;j++)
                A[i][j]=COST[i][j];
for(k=1;k<=n;k++)
        for(i=1;i<=n;i++)
                for(j=1;j<=n;j++)
{
if(A[i][j]<(A[i][k]+A[k][j]))
        A[i][j]=A[i][j];
else
A[i][j]=A[i][k]+A[k][j];
}
}
void main()
{
//clrscr();
a.Getdata();
a.All_paths();
```

```
cout<<"\n Shortest Paths Matrix As Follows :-\n";
for(i=1;i<=n;i++)
{
cout<<endl; for(j=1;j<=n;j++)
        cout<<A[i][j]<<"\t";
}
getch();
}
```

/*OUTPUT*/

```
 Enter the no of nodes :-3

 Enter the cost matrix :-

0 4 11

6 0 2

3 100 0

 Shortest Paths Matrix As Follows :-

0       4       6

5       0       2

3       7       0
```