Experiment No. 9

Write Java programs to

(a) Implement All-Pairs Shortest Paths problem using **Floyd's algorithm**.

```
import java.util.*;
public class floylds_lab {
	void floylds(int d[][],int n)
	{
		int i,j,k;
		for(k=1;k<=n;k++)
		{
			for(i=1;i<=n;i++)
			{
				for(j=1;j<=n;j++)
					d[i][j]= Math.min(d[i][j],(d[i][k]+d[k][j]));
			}
		}
	}

	public static void main(String[] args) {
		int i,n,j;
		int cost[][]= new int[10][10];
		floylds_lab fd= new floylds_lab();
		Scanner sc= new Scanner(System.in);
		System.out.println("enter the size of the matrix");
		n= sc.nextInt();
		System.out.println("enter the weighted matrix");
		for(i=1;i<=n;i++)
		{
			for(j=1;j<=n;j++)
		 cost[i][j]= sc.nextInt();
		}
		System.out.println("the weighted matrix is");
		for(i=1;i<=n;i++)
		{
			for(j=1;j<=n;j++)
			System.out.print(cost[i][j] +"\t");
			System.out.println();
			}
		fd.floylds(cost,n);

		System.out.println(" After making chabges the matrix is");
		for(i=1;i<=n;i++)
		{
			for(j=1;j<=n;j++)
			System.out.print(cost[i][j]+"\t");
			System.out.println();
			}


	}

}


	/*
```

```
enter the size of the matrix

4
enter the weighted matrix
0 3 999 7
8 0 2 999
5 999 0 1
2 999 999 0
the weighted matrix is
0      3      999    7
8      0      2      999
5      999    0      1
2      999    999    0
 The  shortest path matrix is
0      3      5      6
5      0      2      3
3      6      0      1
2      5      7      0
*/
```