```java
package mk;
import java.util.*;
public class Bellman {
    int d[];
    int n;
    static final int max=9999;
    public Bellman(int n) {
        this.n=n;
        d=new int[n+1];
    }
    public static void main(String args[]) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter number of nodes");
        int n=sc.nextInt();
        int a[][]=new int[n][n];
        System.out.println("Enter adjacency matrix");
        for(int i=0;i<n;i++) {
            for(int j=0;j<n;j++) {
                a[i][j]=sc.nextInt();
                if(a[i][j]==0) {
                    a[i][j]=max;
                }
            }
        }
        System.out.println("Enter the source vertex");
        int s=sc.nextInt();
        Bellman b=new Bellman(n);
        b.bford(s,a);
    }
    public void bford(int s,int a[][]) {
        for(int i=0;i<n;i++) {
            d[i]=max;
        }
        d[s]=0;
        for(int k=0;k<n-1;k++) {
            for(int i=0;i<n;i++) {
                for(int j=0;j<n;j++) {
                    if(a[i][j]!=max) {
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39                          if(d[j]>d[i]+a[i][j]) {
40                              d[j]=d[i]+a[i][j];
41                          }
42                      }
43                  }
44              }
45          }
46          for(int i=0;i<n;i++) {
47              System.out.println("shortest distance from
  "+s+" to "+i+" : "+d[i]);
48          }
49      }
50}
51
```