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Name of Experiment Warshall Algorithm

4. Implement Transitive Closure using Warshall's Algorithm for given directed Graph.

Program Code:

```
package Lab_Program 3;
import java.util.Scanner;

public class Warshall_Algorithm
{
    Static  int a[][] ;
    static  int n;

    public static void main (string[] args)
    {
     System.out.println ("Enter the number of vertices");

     Scanner  scanner = new Scanner (System.in);

     n= scanner.next Int ();
     a= new Int [n][n];

     System.out.println ("Enter the cost Matrix ");

     for (int i=0; i<n; i++)
     {
       for(int j=0; j<n; j++)
```

```
            {
                a[i][j] = scanner. nextInt();
            }
        }
        get. Closure();
        Print Matrix ();
        Scanner. close();
    }

    public static void getclosure()
    {
        for (int k=0; k<n; k++)
        {
            for(int i=0; i<n; i++)
            {
                if (a[i][j] = = 1 || a[i][k] == 1 && a[k][j] ==1)
                {
                    a[i][j] = =1;
                }
            }
        }
    }
```

```
public static void PrintMatrix()
{
  System.out.println("Transitive closure :\n");

   for (int i=0; i<n; i++)
   {
      for( int j=0; j<n ; j++)
      {
          System.out.print (a[i][j]  + "   ");
      }
    System.out.println();
   }
  }
}
```

Seen 26/6/23

# Lab Program : 4 Output.

→

```
Enter the number of vertices.
3
Enter the cost Matrix
0 1 0
0 0 1
1 0 0
Transitive closure

1 1 1
1 1 1
1 1 1.
```