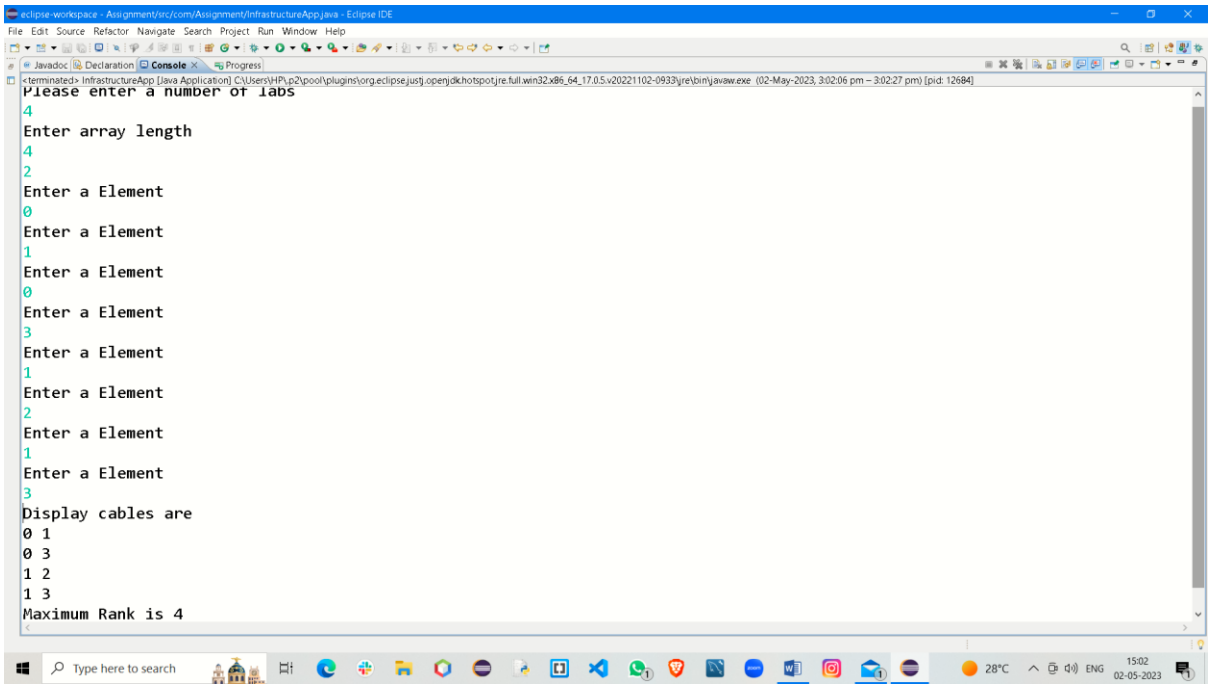
Assignment:

```
package com.Assignment;

public class Infrastructure {

public static int maxRank(int n, int[][] cables) {

int[] labCount = new int[n];

boolean[][] directlyConnected = new boolean[n][n];

// count the number of cables connected to each lab

for (int[] cable : cables) {

int lab1 = cable[0];

int lab2 = cable[1];

labCount[lab1]++;

labCount[lab2]++;

directlyConnected[lab1][lab2] = true;

directlyConnected[lab2][lab1] = true;

}

int maxRank = 0;

// calculate the network rank of each pair of labs

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

for (int j = i + 1; j < n; j++) {

int networkRank = labCount[i] + labCount[j];

if (directlyConnected[i][j]) {

networkRank--;
```

```
}
if (networkRank > maxRank) {
maxRank = networkRank;
}
}
}
return maxRank;
}
}
package com.Assignment;
import java.util.Scanner;
public class InfrastructureApp {
public static void main(String[] args) {
System.out.println("Please enter a number of
labs");
Scanner scan=new Scanner(System.in);
int n=scan.nextInt();
System.out.println("Enter array length");
//Creating 2D array by taking input from the user
int [][]cables=new int
[scan.nextInt()][scan.nextInt()];
for(int i=0;i<=cables.length-1;i++)
```

```
{
for(int j=0;j<=cables[i].length-1;j++)
{
System.out.println("Enter a Element");
cables[i][j]=scan.nextInt();
}
}
//Display array contents
System.out.println("Display array are");
for(int i=0;i<=cables.length-1;i++)
{
for(int j=0;j<=cables[i].length-1;j++)
{
System.out.print(cables[i][j] + " ");
}
System.out.println();
}
int maxRank = Infrastructure.maxRank(n, cables);
System.out.println("Maximum Rank is "+maxRank);
}
}
```

Output:


eclipse-workspace - Assignment/src/com/Assignment/InfrastructureApp.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Javadoc Declaration Console Progress
<terminated> InfrastructureApp [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v20221102-0933\jre\bin\javaw.exe (02-May-2023, 3:02:06 pm – 3:02:27 pm) [pid: 12684]
Please enter a number of labs
4
Enter array length
4
2
Enter a Element
0
Enter a Element
1
Enter a Element
0
Enter a Element
3
Enter a Element
1
Enter a Element
2
Enter a Element
1
Enter a Element
3
Display cables are
0 1
0 3
1 2
1 3
Maximum Rank is 4
Type here to search
28°C
ENG
15:02
02-05-2023