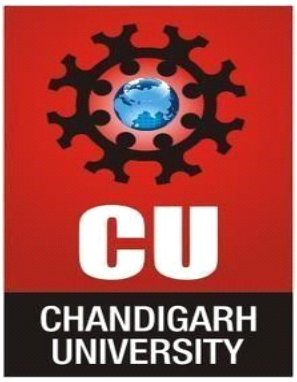
CHANDIGARH UNIVERSITY

UNIVERSITY INSTITUTE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Submitted By: Rajiv Paul	**Submitted To:** Urvashi Malhotra
Subject Name	Competitive Coding-I
Subject Code	20CSP-314
Branch	BE-CSE
Semester	5th

LAB INDEX

Sr. No	Program	Date	Evaluation				Sign
			LW (12)	VV (8)	FW (10)	Total (30)	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.	To solve the following hacker rank problems based on Greedy, Branch and Bound.	03/1122					

EXPERIMENT – 3.3

Student Name:Rajiv Paul **UID:20BCS1812**
Branch: CSE **Section/Group: 20BCS_WM_702(A)**
Semester: 5th **Date of Performance:03/11/2022**
Subject Name: Competitive Coding **Subject Code: 20CSP-314**

AIM OF THE EXPERIMENT:

To solve the following hacker rank problems based on Greedy, Branch and Bound.

Problem 1: https://www.hackerrank.com/challenges/down-to-zero-ii/problem?isFullScreen=true

1. PROGRAM CODE:

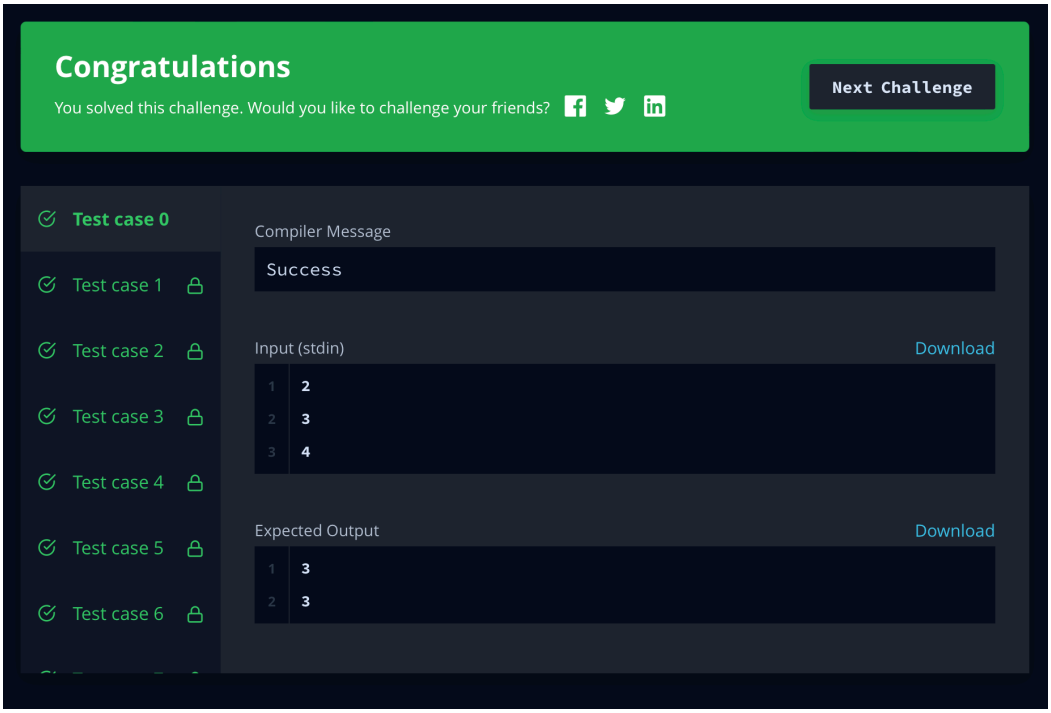
```
import java.io.*;
import java.util.*;


public class Solution {
  static int[] moves = new int[1000001];


  public static void main(String[] args) {
    for (int i = 1; i <= 1000000; ++i) {
      int least = moves[i - 1];
      for (int j = 2; j * j <= i; ++j) {
        if (i % j == 0) {
          least = Math.min(least, moves[i / j]);
        }
```

```
    }
    moves[i] = ++least;
  }
  Scanner in = new Scanner(System.in);
  int t = in.nextInt();
  while (t-- > 0) {
    System.out.println(moves[in.nextInt()]);
  }
 }
}
```

2. OUTPUT:



Problem 2:

https://www.hackerrank.com/challenges/truck-tour/problem?isFullScreen=true

1. **PROGRAM CODE:**

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {
    public static void main(String [] args) {
        Scanner in = new Scanner(System.in);
        int n = in.nextInt();
        List<Integer> list = new ArrayList<Integer>();
        int tank = 0;
        int result = -1;
        for(int loop=0; loop<n; loop++) {
            int net = in.nextInt() - in.nextInt();
            if(tank + net > 0) {
                if(result==-1) {
                    result = loop;
                }
```

```
                list.add(net);
                tank += net;
            } else {
                list.clear();
                tank = 0;
                result = -1;
            }
        }
        System.out.println(result);
        in.close();
    }
}
```

2. OUTPUT: