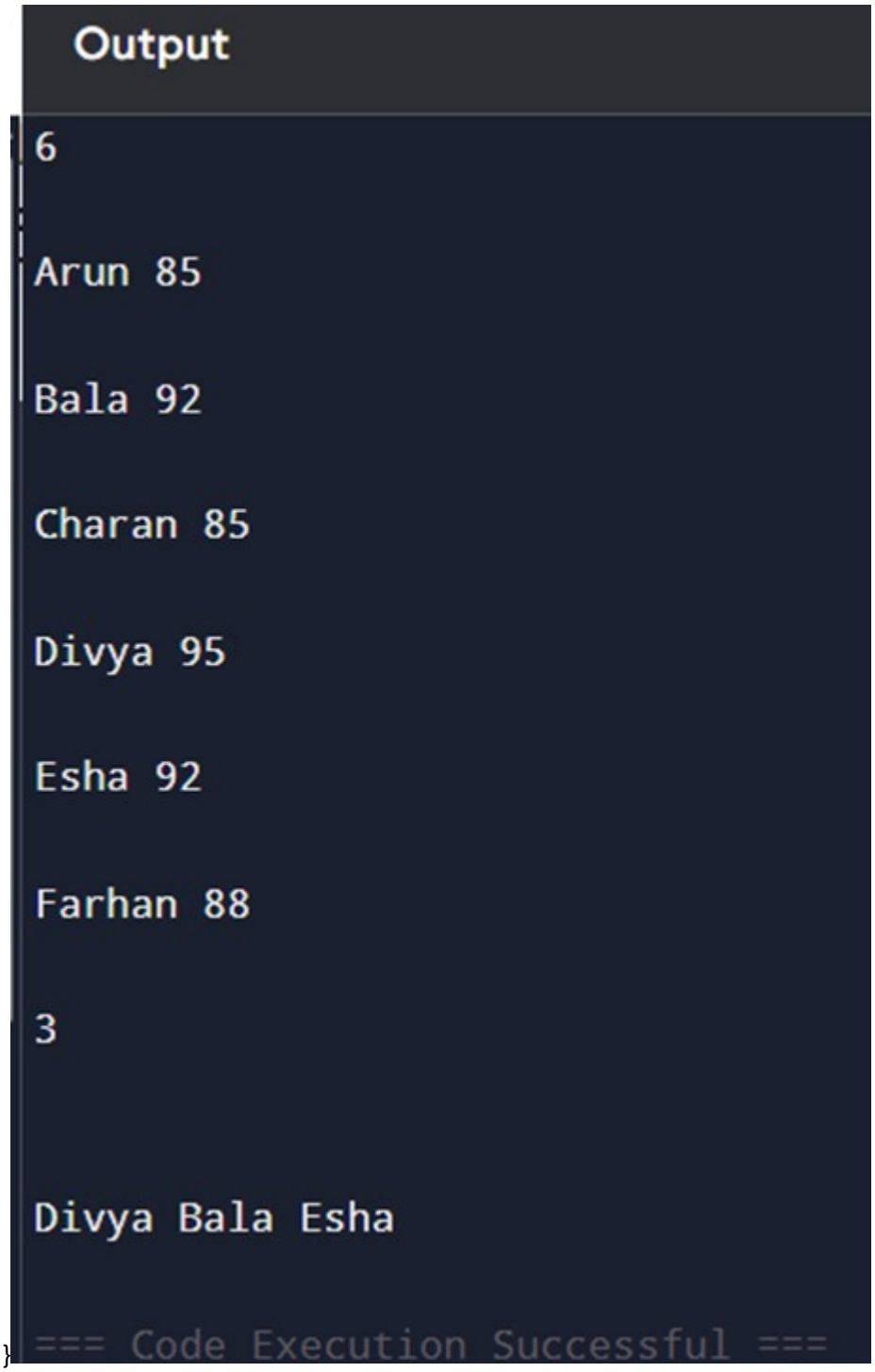
TASK3.1:

```
import java.util.*;
import java.util.stream.Collectors;
class Student {
   String name;
   int marks;
Student(String name, int marks) {
      this.name = name;
      this.marks = marks;
   }
}
public class Main {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      int n = sc.nextInt();
      List<Student> students = new ArrayList<>();
      for (int i = 0; i < n; i++) {
         String name = sc.next();
         int marks = sc.nextInt();
         students.add(new Student(name, marks));
      }
      int k = sc.nextInt();
      List<String> topStudents = students.stream()
            .sorted(
                  Comparator.comparingInt((Student s) -> s.marks)
                        .reversed()
                        .thenComparing(s -> s.name)
            )
            .limit(k)
            .map(s -> s.name)
            .collect(Collectors.toList());
```

```
        System.out.println(String.join(" ", topStudents));
    }
```

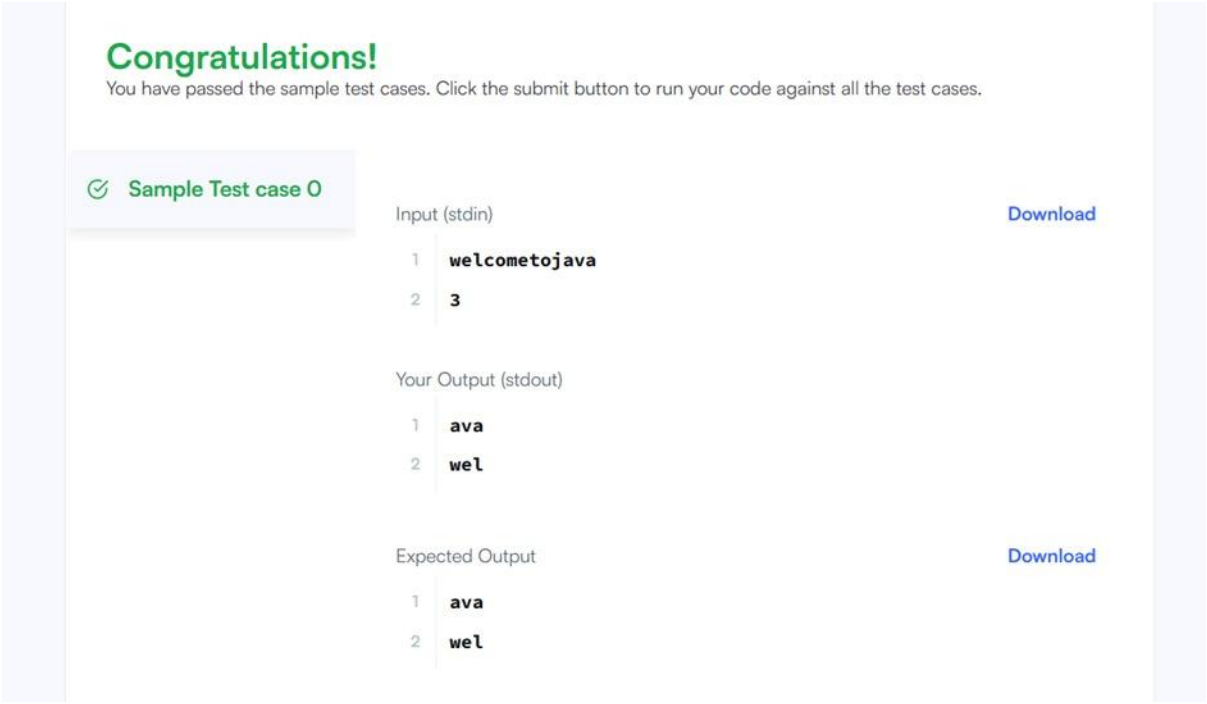



```
}
```

TASK3.2":

```
import java.util.Scanner;
public class Solution {
```

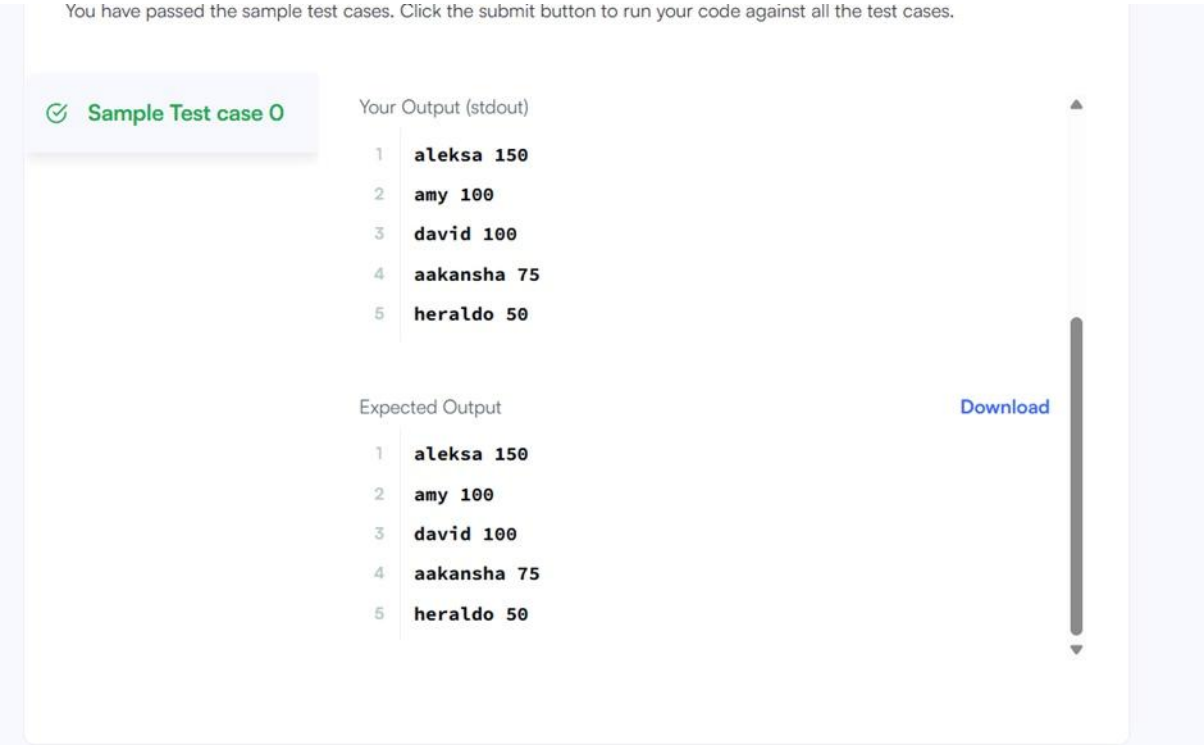
```
    public static String getSmallestAndLargest(String s, int k) {
        String  smallest=s.substring(0,k);
        String largest=s.substring(0,k);
        for(int i=0;i<=s.length()-k;i++){
            String current=s.substring(i,i+k);
            if(current.compareTo(smallest)<0){
                smallest=current;
            }
            if(current.compareTo(largest)>0){
                largest=current;
            }
        }
        return smallest+"\n"+largest;
    }
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        String s = scan.next();
        int k = scan.nextInt();
        scan.close();

        System.out.println(getSmallestAndLargest(s, k));
    }
}
```



TASK3.3:

```
import java.util.*;
class Checker implements Comparator<Player>{
    public int compare(Player a,Player b){
        if(a.score !=b.score){
            return b.score-a.score;
        }
        return a.name.compareTo(b.name);
    }
}
class Player{
    String name;
    int score;
    Player(String name, int score){
        this.name = name;
        this.score = score;
    }
}
```

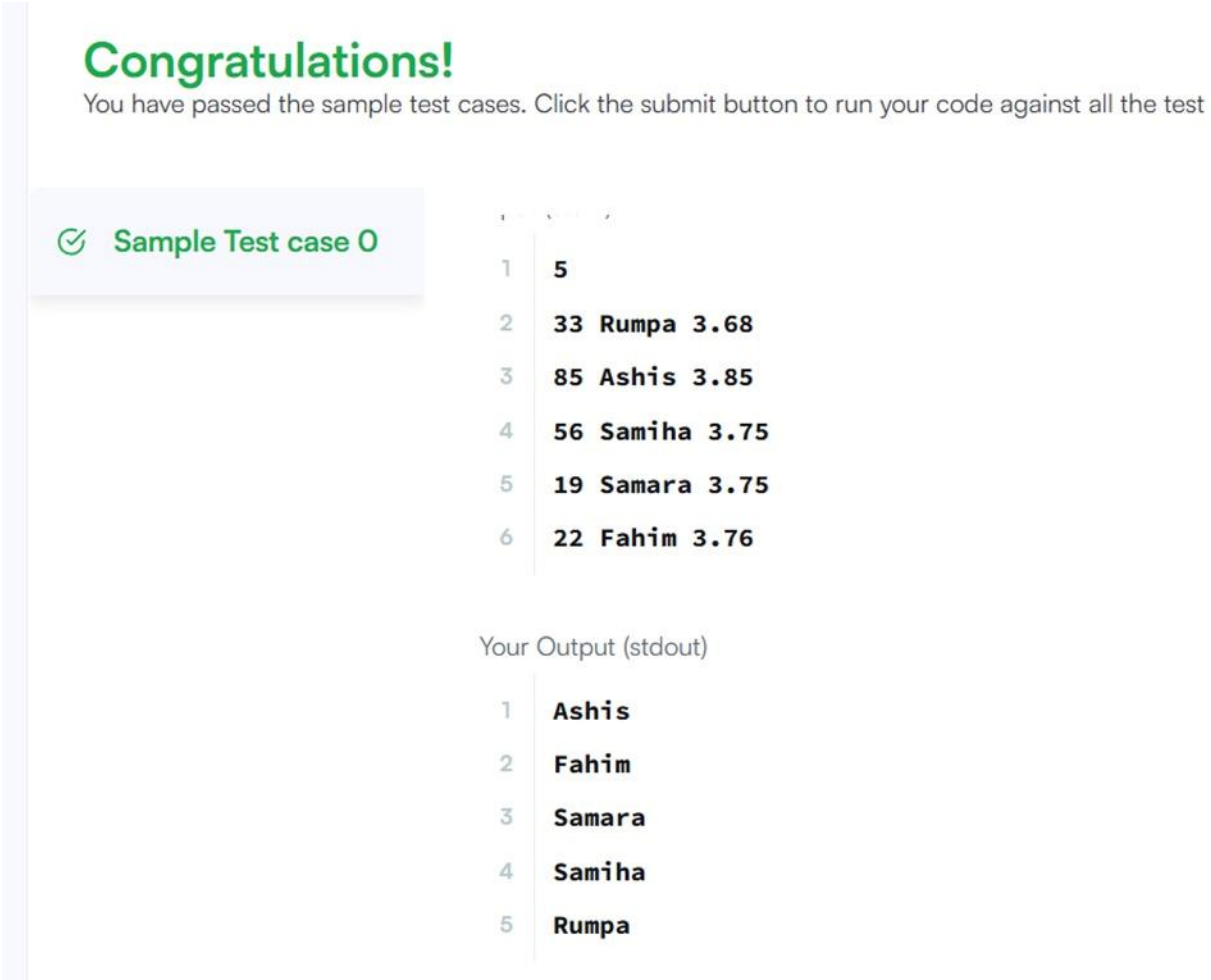
```
class Solution {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int n = scan.nextInt();
        Player[] player = new Player[n];
        Checker checker = new Checker();
        for(int i = 0; i < n; i++){
            player[i] = new Player(scan.next(), scan.nextInt());
        }
        scan.close();
        Arrays.sort(player, checker);
        for(int i = 0; i < player.length; i++){
            System.out.printf("%s %s\n", player[i].name, player[i].score);
        }
    }
}
```



TASK3.4:

```
import java.util.*;


class Student{
    private int id;
    private String fname;
    private double cgpa;
    public Student(int id, String fname, double cgpa) {
        super();
        this.id = id;
        this.fname = fname;
        this.cgpa = cgpa;
    }
    public int getId() {
        return id;
    }
    public String getFname() {
        return fname;
    }
    public double getCgpa() {
        return cgpa;
    }
}
class StudentComparator implements Comparator<Student>{
    public int compare(Student s1,Student s2){
        if(s1.getCgpa()!= s2.getCgpa()){
            return Double.compare(s2.getCgpa(),s1.getCgpa());
        }
        int nameCompare=s1.getFname().compareTo(s2.getFname());
        if(nameCompare!=0){
            return nameCompare;
        }
```

```
        return Integer.compare(s1.getId(),s2.getId());
    }
}
public class Solution
{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        int testCases = Integer.parseInt(in.nextLine());

        List<Student> studentList = new ArrayList<Student>();
        while(testCases>0){
            int id = in.nextInt();
            String fname = in.next();
            double cgpa = in.nextDouble();

            Student st = new Student(id, fname, cgpa);
            studentList.add(st);

            testCases--;
        }
        Collections.sort(studentList, new StudentComparator());

        for(Student st: studentList){
            System.out.println(st.getFname());
        }
    }
}
```



TASK3.5

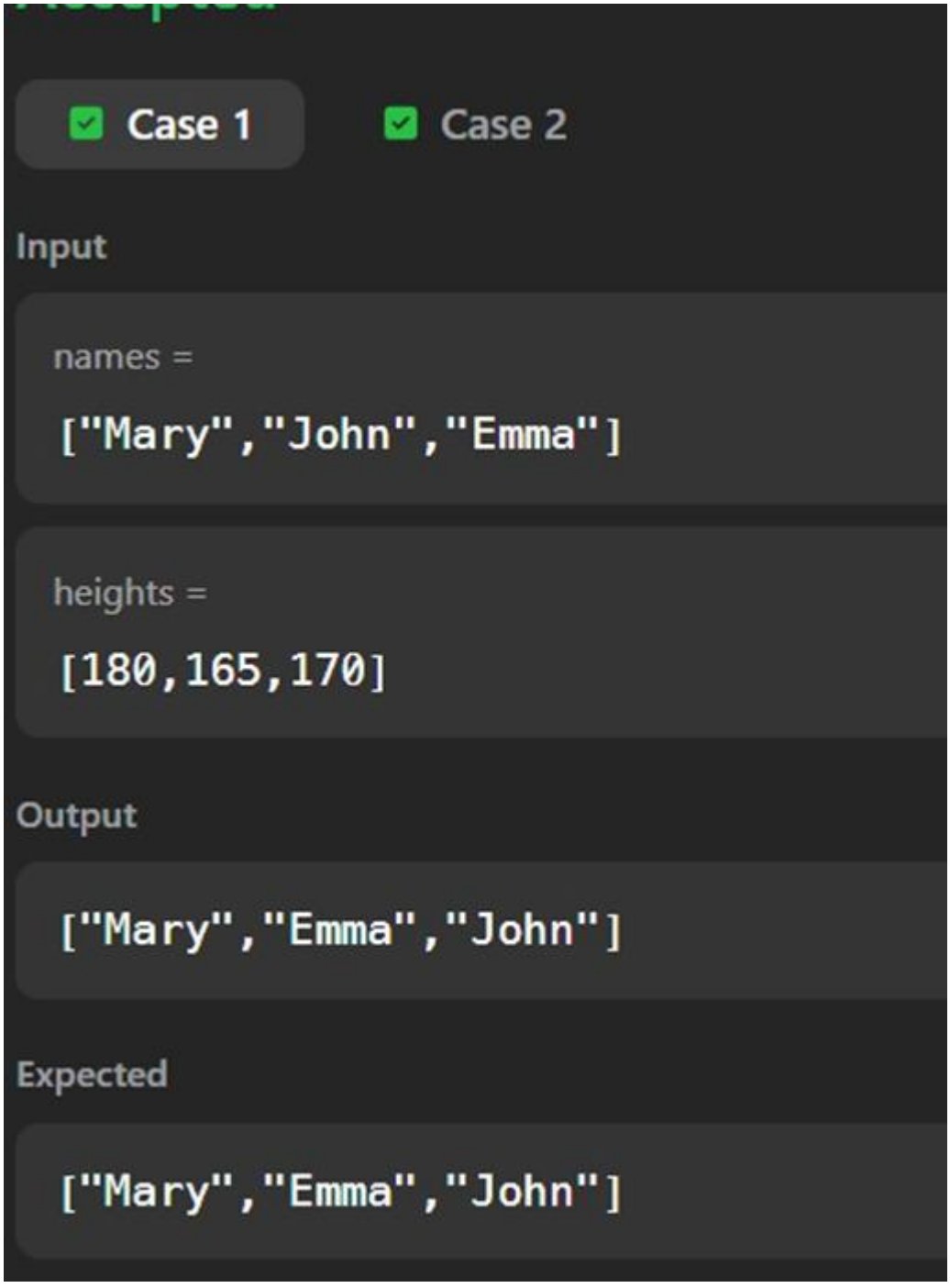
```
import java.io.*;
import java.util.*;


class UserMainCode
{
   public String addNumberStrings(String input1, String input2)
   {
      int i = input1.length() - 1;
      int j = input2.length() - 1;
      int carry = 0;
      StringBuilder result = new StringBuilder();
      while (i >= 0 || j >= 0 || carry > 0)
```

```
        {
            int sum = carry;
            if (i >= 0)
                sum += input1.charAt(i--) - '0';
            if (j >= 0)
                sum += input2.charAt(j--) - '0';
            result.append(sum % 10);
            carry = sum / 10;
        }
        return result.reverse().toString();
    }
}
```

```
[Running] cd "c:\Users\bhask\OneDrive\Desktop\week3\" && javac UserMainCode.java && java UserMainCode
1898
[Done] exited with code=0 in 1.639 seconds
```

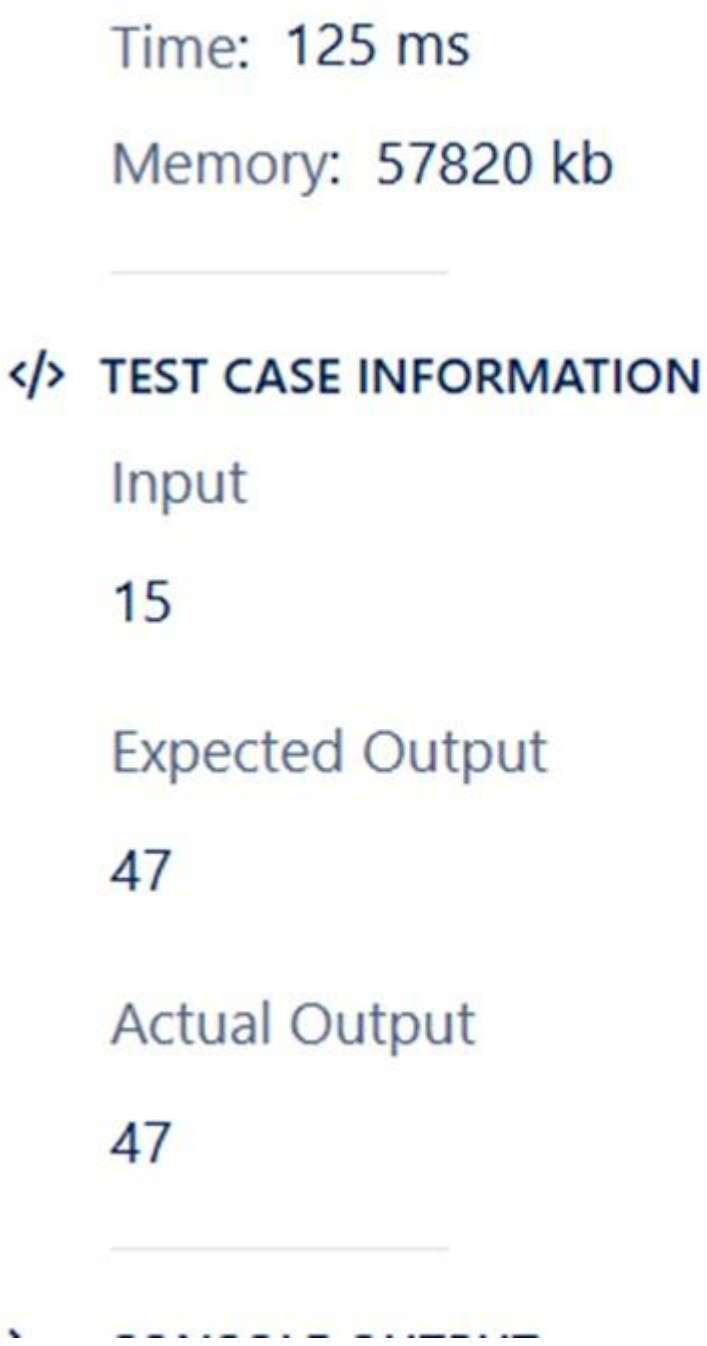
```
class Solution {
    public String[] sortPeople(String[] names, int[] heights) {
        int n = names.length;
        // Create an array of indices
        Integer[] indices = new Integer[n];
        for (int i = 0; i < n; i++) {
            indices[i] = i;
        }

        // Sort indices by corresponding heights in descending order
        Arrays.sort(indices, (a, b) -> heights[b] - heights[a]);

        // Build the result array
        String[] result = new String[n];
        for (int i = 0; i < n; i++) {
```

```
            result[i] = names[indices[i]];
        }

        return result;
    }
}
```



TASK3.6:

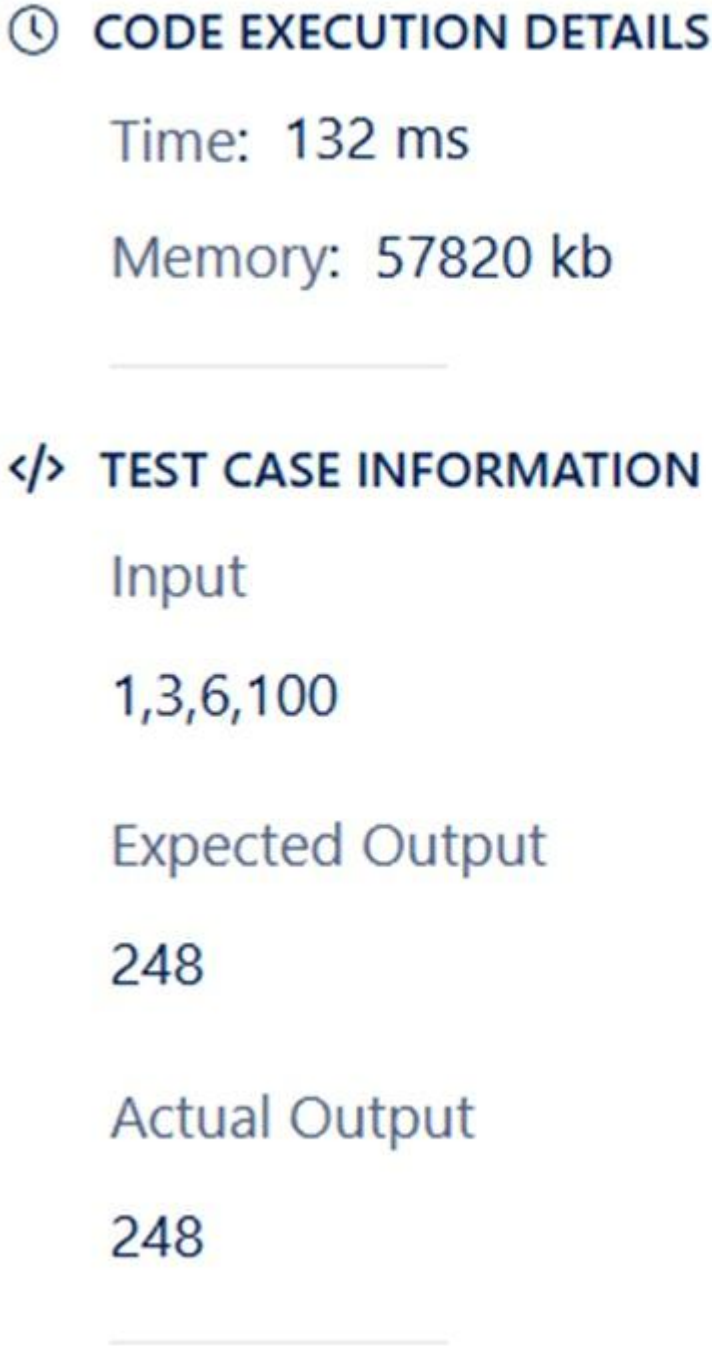
```
class UserMainCode
{
   public int NthPrime(int input1)
   {
      if (input1 <= 0)
         return 0;
      int count = 0;
      int num = 1;
      while (count < input1)
      {
         num++;
         boolean isPrime = true;
         for (int i = 2; i * i <= num; i++)
         {
            if (num % i == 0)
            {
               isPrime = false;
               break;
            }
         }
         if (num >= 2 && isPrime)
            count++;
      }
      return num;
   }
}
```



TASK3.7:

```
import java.io.*;
import java.util.*;
class UserMainCode {
    public int seriesN(int a, int b, int c, int N) {
        if (N == 1) return a;
        if (N == 2) return b;
```

```
    if (N == 3) return c;
    int gap1 = b - a;
    int gap2 = c - b;
    int current = c;
    for (int i = 4; i <= N; i++) {
        if (i % 2 == 0) {
            current += gap1;
        } else {
            current += gap2;
        }
    }
    return current;
}
```



}

TASK3.8:

```
public int AddSub(int input1, int input2) {
    int N = input1;
    int opt = input2;
```

```
int result = N;
boolean add;
if (opt == 1) {
    add = false;
} else {
    add = true;
}
for (int i = N - 1; i >= 1; i--) {
    if (add) {
        result += i;
    } else {
        result -= i;
    }
    add = !add;
}
return result;
```

default

CODE EXECUTION DETAILS

Time: 128 ms

Memory: 57820 kb

TEST CASE INFORMATION

Input

10000,2

Expected Output

15000

Actual Output

15000

CONSOLE OUTPUT

}