1) Write a program to check if a number is a palindrome

2) Write a program to find out if a number is prime

3) Write a program to check if a number is Armstrong's number or not?

4) Print the following pattern using for loop

```
*
* *
* * *
* * * *
* * * * *
```

5) Print the following pattern using for loop

```
    *
   **
  ***
 ****
*****
```

6) Write a program to sort an integer array without using any functions

7) Write a program to print the Fibonacci series up to a given number

8) Write a program to find if a number is the power of 2

9) Write a program to split a string based on spaces

Sample Input and Output :

Enter the string:

ABCD Technologie is a private organization

The words in the string are

ABCD

Technologies

is

a

private

organization

10) Find HCF of Two Numbers

11) Find LCM of Two Numbers

12) Write a program to find the maximum occurring character from a given string.

Note: If more than 1 character has max frequency, then the character which first occurs in the alphabetical order will be taken.

For eg: In the string, “tweet”, both ‘t’ and ‘e’ occurs 2 times. But in alphabetical order, ‘e’ comes before ‘t’. So ‘e’ will be taken for output.

Sample Input and Ouput:

Enter a string : Welcome to wonderland

The character with maximum frequency : e

The no. of occurences : 3

13) "Shades" Television Channel organizes a fun-filled event named "Best Couple 2017", where in married couples would be invited and given many tasks and activities. Based on some criteria decided by the jury, a best couple will be chosen.

N couples registered for the event and each couple was given a registration number(it may repeat). One specific couple's registration Id got missed. The event coordinators wanted your help in finding the missing Id.

Write a program which takes an array of registration numbers as input and outputs the missing registration Id.

Input Format:

First line of the input contains the number of couples N who registered for the event. Assume that the maximum value for N as 50.

Second line of input contains N registration Id of each of the couple, separated by a space.

Output Format:

Output in a single line the missing registration Id.

Refer sample input and output for formatting specifications.

Sample Input 1:

3

1 2 1

Sample Output 1:

2

Sample Input 2:

5

1 1 2 2 3

Sample Output 2:

3

14) The runs scored by N batsmen of a cricket team is passed as the input to the program. The program must print the name of the batsman who scored the highest runs. (You can assume that no two batsmen will be the top scorers).

Input Format:

The first line denotes the value of N.

Next N lines will contain the name of the batsman and the runs score (both separated by a comma)

Output Format:

The first line contains the name of the batsman with the top score.

Boundary Conditions:

2 <= N <= 11

The length of the names will be from 3 to 100.

The value of the runs will be from 0 to 500.

Example Input/Output 1:

Input:

5

BatsmanA,45

BatsmanB,52

BatsmanC,12

BatsmanD,9

BatsmanE,78

Output:

BatsmanE

15) The Christ university is one of the popular university. Every year the students strength is keep on increasing. They wished to generate unique id for each students.Write a java program to check whether the student id is valid or not.

Validation Rules :

First four letter should be year of joining given in the student details

Next sequence followed by acronym of department name (given in the student detail) and followed by four digit number .

Input Format :

The first line of the input consists of a String that corresponds to the student details includes Student name, Department name, year of joining which is separated by comma.

The second line of the input consists of a student id.

Output Format :

Output consists of a string that corresponds to the validity of student Id

Sample Input /Output 1 :

Enter the Student Details

Gayathri,Information Technology,2013

2013IT2134

Valid

Sample Input /Output 2 :

Enter the Student Details

Ashiff,Computer Science Engineering ,2013

2017CSE0123

Invalid

16) Find HCF of 3 Numbers

17) Find LCM of 3 Numbers

18) Convert Decimal to Binary

Ex:

Input:

12

Output:

1100

19) The Pan Am 73 flight from Bombay to New York en route Karachi and Frankfurt was hijacked by a few Palestinian terrorists at the Karachi International Airport.

The senior flight purser Neerja Banhot had to wither her fear and start evacuating the passengers on board. She pleaded the hijackers to release the oldest and the youngest person in the aircraft. Heeding to her plea the chief of the hijacker agreed to let go the oldest and the youngest. Given the ages of the passengers find the oldest and the youngest.

Input Format :

The input consists of n+1 lines.

The first line of input consists of an integer n, corresponding to the number of passengers in the aircraft.

The next n lines of input consist of n integers that correspond to the age of the passengers.

Output Format :

The output consists of 2 integers corresponding to the oldest and the youngest.

Print Invalid Input and terminate the process of getting inputs if n or any of the ages is not a non zero positive number.

Sample Input 1:

5

1

3

5

2

4

Sample Output 1:

1 5

Sample Input 2:

6

68

-45

Sample Output 2:

Invalid Input

Sample Input 3:

-6

Sample Output 3:

Invalid Input

20) A version Managementsystem (VMS) is a repository of files, often the files for the source code of computer programs, with monitored access. Every change made to the source is tracked, along with who made the change, why they made it, and references to problems fixed, or enhancements introduced, by the change.

In this problem we will consider a simplified model of a development project. Let's suppose that there are N source files in the project. All the source files are distinct and numbered from 1 to N.

A VMS which is used for maintaining the project contains two sequences of source files. The first sequence contains M source files that are ignored by the VMS. If a source file is not in the first sequence, then it's considered to be unignored. The second sequence contains K source files that are tracked by the VMS. If a source file is not in the second sequence, then it's considered to be untracked.

A source file can either be or not be in any of these two sequences. Your task is to calculate two values: the number of source files of the project, that are both tracked and ignored, and the number of source files of the project, that are both untracked and unignored.

Input Format:

The first line of the input contains three integers N, M and K denoting the number of source files in the project, the number of ignored source files and the number of tracked source files. Assume that the maximum value for N as 50.

The second line contains M distinct integers denoting the sequence A of ignored source files. The sequence is strictly increasing.

The third line contains K distinct integers denoting the sequence B of tracked source files. The sequence is strictly increasing.

Output Format:

Output a single line containing two integers: the number of the source files, that are both tracked and ignored, and the number of the source files, that are both untracked and unignored.

Refer sample input and output for formatting specifications.

Sample Input 1:

7 4 6

1 4 6 7

1 2 3 4 6 7

Sample Output 1:

4 1

Sample Input 2:

4 2 2

1 4

3 4

Sample Output 2:

1 1

21) LucarnosFilm Festival is an annual film festival and is also known for being a prestigious platform for art house films. This time at the Lucarnos Film festival there are N movies screened, each of different genre ranging from drama movies to comedy ones and teen movies to horror ones. Lucy is a huge fan of movies and visited the film festival, but she's not sure which movie she should watch.

Each movie can be characterized by two integers Li and Ri, denoting the length and the rating of the corresponding movie. Lucy wants to watch exactly one movie with the maximal value of Li × Ri. If there are several such movies, she would pick a one with the maximal Ri among them. If there is still a tie, she would pick the one with the minimal index among them.

Write a program to help Lucy pick a movie to watch at the film festival.

Input Format:

The first line of the input description contains an integer n. Assume that the maximum value for n as 50.

The second line of the input description contains n integers L1, L2, ...,Ln.

The following line contains n integers R1, R2, ...,Rn.

Output Format:

Output a single integer i denoting the index of the movie that Lucy should watch in the film festival. Note that you follow 1-based indexing.

Refer sample input and output for formatting specifications.

Sample Input 1:

2

1 2

2 1

Sample Output 1:

1

Sample Input 2:

4

2 1 4 1

2 4 1 4

22) Rotate a matrix by 90 degree in clockwise direction

Input:

1 2 3

4 5 6

7 8 9

Output:

7 4 1

8 5 2

9 6 3

23) Group same elements in an array

Input : 3 1 3 4 1 3 4

Output: 1 1 3 3 3 4 4

24) Stella and friends have set out on a vacation to Manali. They have booked accommodation in a resort and the resort authorities headed by Bob, organize Campfires every night as a part of their daily activities. Stella volunteered herself for an activity called the "Stick Game".

Stella was given a total of N sticks. The length of i-th stick is Ai. Bob insists Stella choose any four sticks and make a rectangle with those sticks as its sides. Bob warns Stella not to break any of the sticks, she has to use sticks as a whole.

Also, Bob wants that the rectangle formed should have the maximum possible area among all the rectangles that Stella can make. Stella takes this challenge up and overcomes it. You have to help her know whether it is even possible to create a rectangle. If yes, then tell the maximum possible area of the rectangle.

Input Format:

The first line of the input contains a single integer N denoting the number of sticks.

The second line of each test case contains N space-separated integers A1, A2, ...,AN denoting the lengths of sticks.

Output Format:

Output a single line containing an integer representing the maximum possible area for rectangle or output -1, if it's impossible to form any rectangle using the available sticks.

Refer sample input and output for formatting specifications.

Sample Input 1:

5

1 2 3 1 2

Sample Output 1:

2

Sample Input 2:

4

1 2 2 3

Sample Output 2:

-1

25) "Axcent Academy" has arranged for a competitive test for medical students from rural villages. Those successful students of the test will be awarded the scholarship for their NEET preparations at Axcent Academy. Benny, the co-coordinator and founder of the academy has given one problem for the first stage of the test. The problem goes like this:

Given an array A1, A2, ..., AN, count the number of subarrays of array A which are non-decreasing.

A subarrayA[i, j], where $1 \leq i \leq j \leq N$ is a sequence of integers Ai, Ai+1, ..., Aj.

A subarrayA[i, j] is non-decreasing if $Ai \leq Ai+1 \leq Ai+2 \leq ... \leq Aj$. Count the total number of such subarrays.

Benny himself has not computed the solution of the problem. Write a program to help him find the answer for the same to evaluate the students.

Input Format:

The first line of input contains a single integer N denoting the size of array. Assume that the maximum value for N as 50.

The second line contains N space-separated integers A1, A2, ...,AN denoting the elements of the array.

Output Format:

Output in a single line, the count of the total number of such subarrays.

Refer sample input and output for formatting specifications.

Sample Input 1:

4

1 4 2 3

Sample Output 1:

6

Sample Input 2:

3

3 1 4

Sample Output 2:

4