QUESTION 1 :
Write a program to find the first repeated character of a given String?

Sample Input 1 :
I gave an apple

Output:
a

Sample Input 2 :
Hold me high

Output:
h

Question 2:
Each element in an array will have a rank. You have to sort the elements of the array based on the rank. If two elements have the same rank then the element must be sorted based on their numeric value.

Sample Input 1:
Array: [1,5,6,3,10]
Rank: [100,0,1,100,2]

Output:
[5,6,10,1,3]

Hint for your understanding:
5 has the lowest rank 0, and 6 has next lowest 1 and 10 has the next lowest rank 2.
1 and 3 has same rank 100, so it is sorted based on their numeric value (1<3)

Sample Input 2:
Array: [3,1,2,5]
Rank: [1,1,2,2]

Output:
[1,3,2,5]

QUESTION 3:

Given an unsorted array of integers, return the length of the longest consecutive elements sequence.

Input 1:

[100,4,200,1,3,2]

Output:

4

Explanation:

The longest consecutive elements sequence is [1, 2, 3, 4]. Therefore its length is 4.

Input 2:

[0,3,7,2,5,8,4,6,0,1]

Output:

9

QUESTION 4:
Write a program to print the following pattern with the same alignment. 'n' represents no of lines to be printed.

Sample Input 1 :
Enter n : 5

Output:
```
        1
      1 2 1
    1 2 3 2 1
  1 2 3 4 3 2 1
1 2 3 4 5 4 3 2 1
```

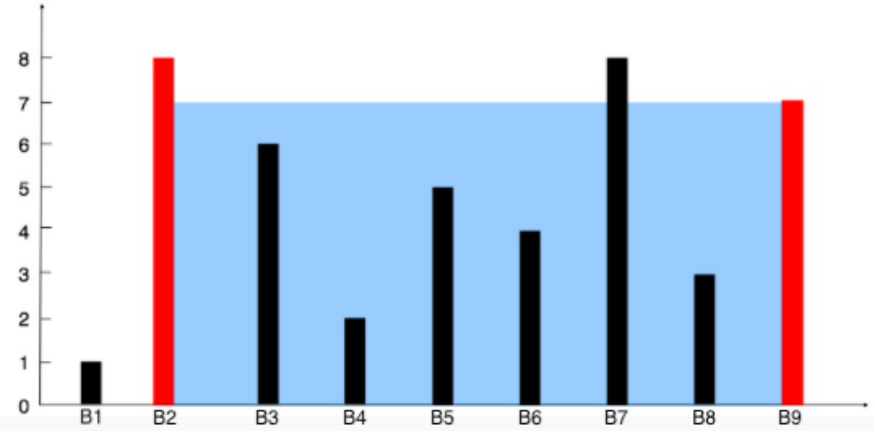
Sample Input 2 :
Enter n : 4

Output:
```
      1
    1 2 1
  1 2 3 2 1
1 2 3 4 3 2 1
```

QUESTION 5:

In a town called Konoha, there are N concrete buildings next to each other with a equal space between them. Whenever it rains, the water will flood between the buildings. Your task is to identify the maximum possible amount of water that can be flooded between any two of those buildings.

For example,
Consider an Array,
[1,8,6,2,5,4,8,3,7]



If the water is flooded between B2 and B9 then we will get the maximum amount of water as 49.
Explanation:
Water amount between B2 and B3 - 7
Water amount between B3 and B4 - 7
Water amount between B4 and B5 - 7
And so on till B9. So total 49 which is the output

Sample Input 1:
[1,8,6,2,5,4,8,3,7]

Sample Output 1:
49

Sample Input 2:
[1,2,1]

Sample Output 2:
2

QUESTION 6:

Given a square matrix, find all the distinct elements common to all rows of the matrix. The elements can be printed in any order.

Sample Input 1:

```
{  {2, 1, 4, 3},
   {1, 2, 3, 2},
   {3, 6, 2, 3},
   {5, 2, 5, 3}  }
```

Sample Output 1:

2 3

Sample Input 2:

```
{  {12, 1, 14, 3, 16},
   {14, 2, 1, 3, 35},
   {14, 1, 14, 3, 11},
   {14, 25, 3, 2, 1},
   {1, 18, 3, 21, 14}  }
```

Sample Output 2:

1 3 14