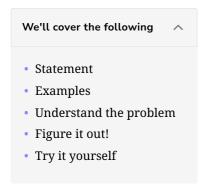# Two Single Numbers

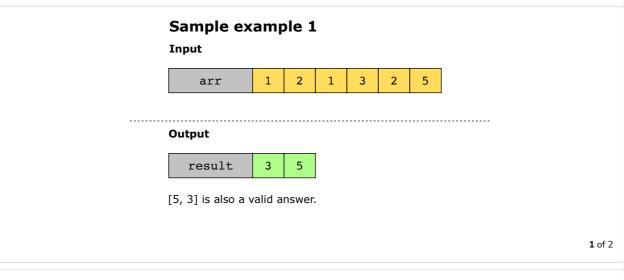Try to solve the Two Single Numbers problem.

Statement

Given a non-empty array `arr`, in which exactly two elements appear once and all the other elements appear twice, return the two elements that come only once.
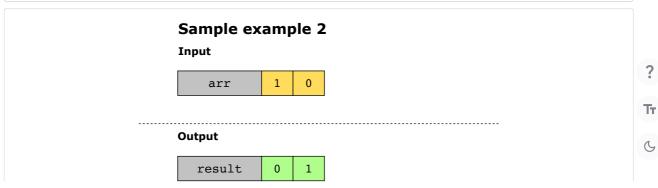
> **Note:** The result can be returned in any order. The solution should use constant space.

Constraints:

- $2 \leq$ `arr.length` $\leq 3 * 10^4$
- $-2^{31} \leq$ `arr[i]` $\leq 2^{31} - 1$

Examples

Sample example 1

Input

arr	1	2	1	3	2	5

Output

result	3	5

[5, 3] is also a valid answer.

Sample example 2

Input

arr	1	0

Output

result	0	1

[1, 0] is also a valid answer.

Understand the problem

Let's take a moment to make sure you've correctly understood the problem. The quiz below helps you check if you're solving the correct problem:

Two Single Numbers

1 What is the output if the following array is given as an input?

arr = [1, 6, 2, 1, 2, 4, 7, 4]

Select all that apply.

A) [6, 2]

B) [6, 7]

C) [7, 6]

D) [1, 2, 4]

Submit Answer
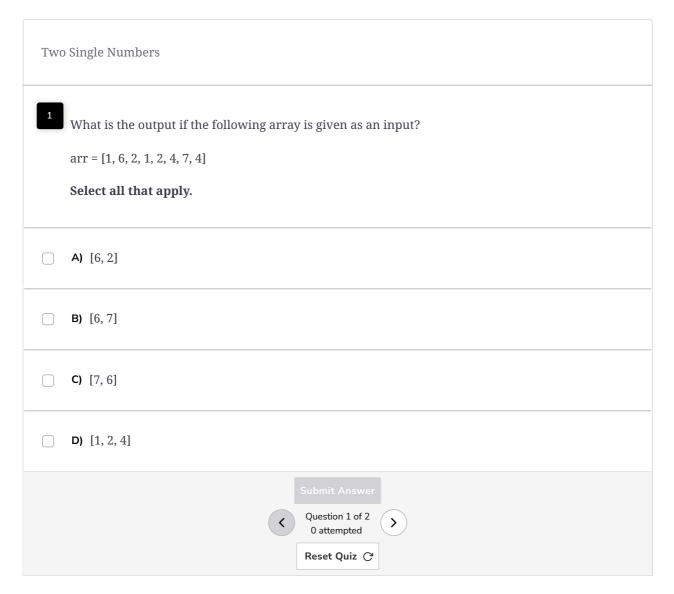
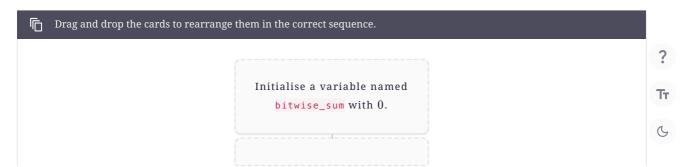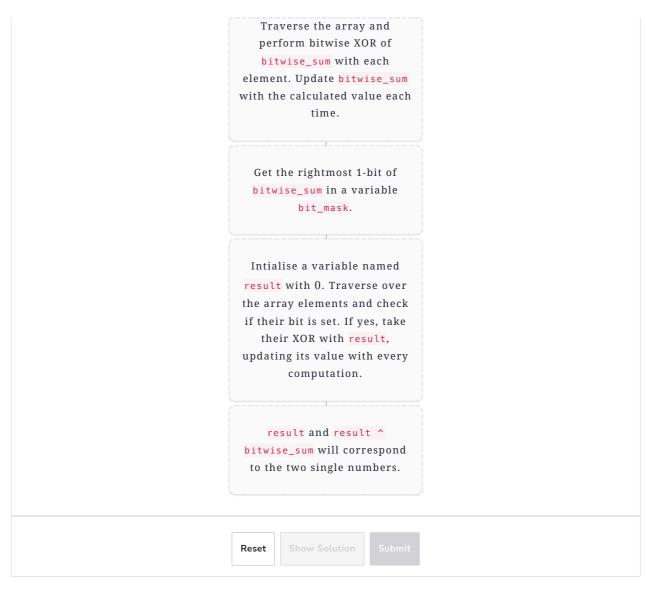Question 1 of 2
0 attempted

Reset Quiz ↻

Figure it out!
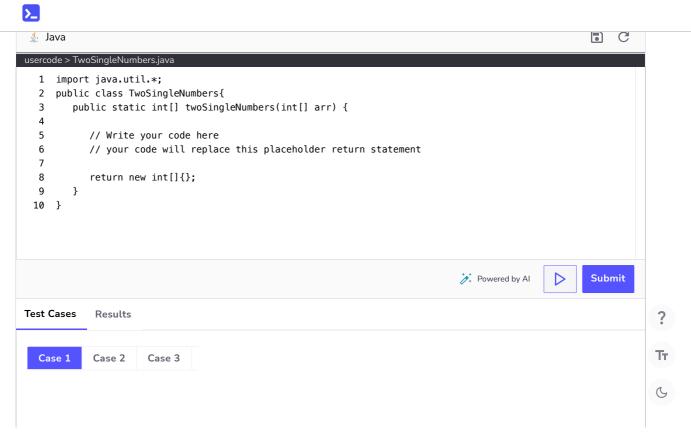
We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.

Drag and drop the cards to rearrange them in the correct sequence.

Initialise a variable named
`bitwise_sum` with 0.

Traverse the array and perform bitwise XOR of `bitwise_sum` with each element. Update `bitwise_sum` with the calculated value each time.

Get the rightmost 1-bit of `bitwise_sum` in a variable `bit_mask`.

Intialise a variable named `result` with 0. Traverse over the array elements and check if their bit is set. If yes, take their XOR with `result`, updating its value with every computation.

`result` and `result ^ bitwise_sum` will correspond to the two single numbers.

Reset   Show Solution   Submit

Try it yourself

Java

usercode > TwoSingleNumbers.java

```java
1  import java.util.*;
2  public class TwoSingleNumbers{
3      public static int[] twoSingleNumbers(int[] arr) {
4
5          // Write your code here
6          // your code will replace this placeholder return statement
7
8          return new int[]{};
9      }
10 }
```

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Test Cases   Results

Case 1   Case 2   Case 3

Input #1

[1,2,2,3,3,4]

Two Single Numbers

☑ Mark as
Completed