

# Problem 556: Next Greater Element III

## Problem Information

**Difficulty:** Medium

**Acceptance Rate:** 34.97%

**Paid Only:** No

**Tags:** Math, Two Pointers, String

## Problem Description

Given a positive integer `n`, find the smallest integer which has exactly the same digits existing in the integer `n` and is greater in value than `n`. If no such positive integer exists, return `-1`.

**Note** that the returned integer should fit in **32-bit integer**, if there is a valid answer but it does not fit in **32-bit integer**, return `-1`.

**Example 1:**

**Input:** `n = 12` **Output:** `21`

**Example 2:**

**Input:** `n = 21` **Output:** `-1`

**Constraints:**

`1 ≤ n ≤ 231 - 1`

## Code Snippets

**C++:**

```
class Solution {  
public:
```

```
int nextGreaterElement(int n) {  
  
}  
};
```

### Java:

```
class Solution {  
    public int nextGreaterElement(int n) {  
  
    }  
}
```

### Python3:

```
class Solution:  
    def nextGreaterElement(self, n: int) -> int:
```