# Problem 496: Next Greater Element I

## Problem Information

**Difficulty:** Easy
**Acceptance Rate:** 75.34%
**Paid Only:** No
**Tags:** Array, Hash Table, Stack, Monotonic Stack

## Problem Description

The **next greater element** of some element `x` in an array is the **first greater** element that is **to the right** of `x` in the same array.

You are given two **distinct 0-indexed** integer arrays `nums1` and `nums2`, where `nums1` is a subset of `nums2`.

For each `0 <= i < nums1.length`, find the index `j` such that `nums1[i] == nums2[j]` and determine the **next greater element** of `nums2[j]` in `nums2`. If there is no next greater element, then the answer for this query is `-1`.

Return _an array_`ans` _of length_`nums1.length` _such that_`ans[i]`_is the**next greater element** as described above._

**Example 1:**

**Input:** nums1 = [4,1,2], nums2 = [1,3,4,2] **Output:** [-1,3,-1] **Explanation:** The next greater element for each value of nums1 is as follows: - 4 is underlined in nums2 = [1,3,_4_ ,2]. There is no next greater element, so the answer is -1. - 1 is underlined in nums2 = [_1_ ,3,4,2]. The next greater element is 3. - 2 is underlined in nums2 = [1,3,4,_2_]. There is no next greater element, so the answer is -1.

**Example 2:**

**Input:** nums1 = [2,4], nums2 = [1,2,3,4] **Output:** [3,-1] **Explanation:** The next greater element for each value of nums1 is as follows: - 2 is underlined in nums2 = [1,_2_ ,3,4]. The next greater element is 3. - 4 is underlined in nums2 = [1,2,3,_4_]. There is no next greater

element, so the answer is -1.

**Constraints:**

* `1 <= nums1.length <= nums2.length <= 1000` * `0 <= nums1[i], nums2[i] <= 104` * All integers in `nums1` and `nums2` are **unique**. * All the integers of `nums1` also appear in `nums2`.

**Follow up:** Could you find an `O(nums1.length + nums2.length)` solution?

## Code Snippets

**C++:**

```
class Solution {
public:
vector<int> nextGreaterElement(vector<int>& nums1, vector<int>& nums2) {

}
};
```

**Java:**

```
class Solution {
public int[] nextGreaterElement(int[] nums1, int[] nums2) {

}
}
```

**Python3:**

```
class Solution:
def nextGreaterElement(self, nums1: List[int], nums2: List[int]) ->
List[int]:
```