1464. Maximum product of two elements of arrays:

Given the array of integers

```
nums
```

You will choose two different indices

```
i
```

and

```
j
```

of that array.

Return the maximum value of

```
(nums[i]-1)*(nums[j]-1)
```

.

Example 1:

```
Input: nums = [3,4,5,2]
Output: 12
Explanation: If you choose the indices i=1 and j=2 (indexed
from 0), you will get the maximum value, that is, (nums[1]-
1)*(nums[2]-1) = (4-1)*(5-1) = 3*4 = 12.
```

Example 2:

```
Input: nums = [1,5,4,5]
Output: 16
```

```
Explanation: Choosing the indices i=1 and j=3 (indexed from
0), you will get the maximum value of (5-1)*(5-1) = 16.
```

Example 3:

```
Input: nums = [3,7]
Output: 12
```

Constraints:

- `2 <= nums.length <= 500`
- `1 <= nums[i] <= 10^3`

Solution: Time = O(n logn) and space=O(n)

```
class Solution:
    def maxProduct(self, nums: List[int]) -> int:
        nums.sort(reverse=True)
        return (nums[0]-1)*(nums[1]-1)
```

Optimal Solution: Time = O(n) and space = O(1)

```
class Solution:
    def maxProduct(self, nums: List[int]) -> int:
        max1 = max2 = 0

        for num in nums:
            if num > max1:
                max2 = max1
                max1 = num
            elif num > max2:
                max2 = num

        return (max1 - 1) * (max2 - 1)
```