739. Daily Temperatures

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Given a list of daily `temperatures`, produce a list that, for each day in the input, tells you how many days you would have to wait until a warmer temperature. If there is no future day for which this is possible, put `0` instead.

For example, given the list `temperatures = [73, 74, 75, 71, 69, 72, 76, 73]`, your output should be `[1, 1, 4, 2, 1, 1, 0, 0]`.

Note: The length of `temperatures` will be in the range `[1, 30000]`. Each temperature will be an integer in the range `[30, 100]`.

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- Difficulty:Medium
- Total Accepted:2.4K
- Total Submissions:4.8K
- Contributor: Rizve
-
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Approach #1: Next Array [Accepted]

Intuition

The problem statement asks us to find the next occurrence of a warmer temperature. Because temperatures can only be in `[30, 100]`, if the temperature right now is say, `T[i] = 50`, we only need to check for the next occurrence of `51`, `52`, ..., `100` and take the one that occurs soonest.

Algorithm

Let's process each `i` in reverse (decreasing order). At each `T[i]`, to know when the next occurrence of say, temperature `100` is, we should just remember the last one we've seen, `next[100]`.

Then, the first occurrence of a warmer value occurs at `warmer_index`, the minimum of `next[T[i]+1], next[T[i]+2], ..., next[100]`.

```
class Solution {
    public int[] dailyTemperatures(int[] T) {
        int[] ans = new int[T.length];
        int[] next = new int[101];
        Arrays.fill(next, Integer.MAX_VALUE);
        for (int i = T.length - 1; i >= 0; --i) {
            int warmer_index = Integer.MAX_VALUE;
            for (int t = T[i] + 1; t <= 100; ++t) {
                if (next[t] < warmer_index)
                    warmer_index = next[t];
            }
            if (warmer_index < Integer.MAX_VALUE)
                ans[i] = warmer_index - i;
            next[T[i]] = i;
        }
        return ans;
    }
}
```