

338. Counting Bits

Easy

 Topics

 Companies

 Hint

Given an integer n , return an array `ans` of length $n + 1$ such that for each i ($0 \leq i \leq n$), `ans[i]` is the **number of 1's** in the binary representation of i .

Example 1:

Input: `n = 2`
Output: `[0,1,1]`
Explanation:
`0 --> 0`
`1 --> 1`
`2 --> 10`

Example 2:

Input: `n = 5`
Output: `[0,1,1,2,1,2]`
Explanation:
`0 --> 0`
`1 --> 1`
`2 --> 10`
`3 --> 11`
`4 --> 100`
`5 --> 101`

Constraints:

- $0 \leq n \leq 10^5$

Follow up:

- It is very easy to come up with a solution with a runtime of $O(n \cdot \log n)$. Can you do it in linear time $O(n)$ and possibly in a single pass?
- Can you do it without using any built-in function (i.e., like `__builtin_popcount` in C++)?

Seen this question in a real interview before? 1/4

Yes

No

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 Hint 1

 Hint 2

 Hint 3

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