Problem 397: Integer Replacement

Problem Information

Difficulty: Medium
Acceptance Rate: 36.98%
Paid Only: No
Tags: Dynamic Programming, Greedy, Bit Manipulation, Memoization

Problem Description

Given a positive integer `n`, you can apply one of the following operations:

1. If `n` is even, replace `n` with `n / 2`. 2. If `n` is odd, replace `n` with either `n + 1` or `n - 1`.

Return _the minimum number of operations needed for_ `n` _to become_ `1`.

Example 1:

Input: n = 8 **Output:** 3 **Explanation:** 8 -> 4 -> 2 -> 1

Example 2:

Input: n = 7 **Output:** 4 **Explanation:** 7 -> 8 -> 4 -> 2 -> 1 or 7 -> 6 -> 3 -> 2 -> 1

Example 3:

Input: n = 4 **Output:** 2

Constraints:

* `1 <= n <= 231 - 1`

Code Snippets

C++:

```
class Solution {
public:
int integerReplacement(int n) {

}
};
```

Java:

```
class Solution {
public int integerReplacement(int n) {

}
}
```

Python3:

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