


693. Binary Number with Alternating Bits

Solved 

Easy

Topics

Companies

Given a positive integer, check whether it has alternating bits: namely, if two adjacent bits will always have different values.

Example 1:

Input: $n = 5$

Output: `true`

Explanation: The binary representation of 5 is: 101

Example 2:

Input: $n = 7$

Output: `false`

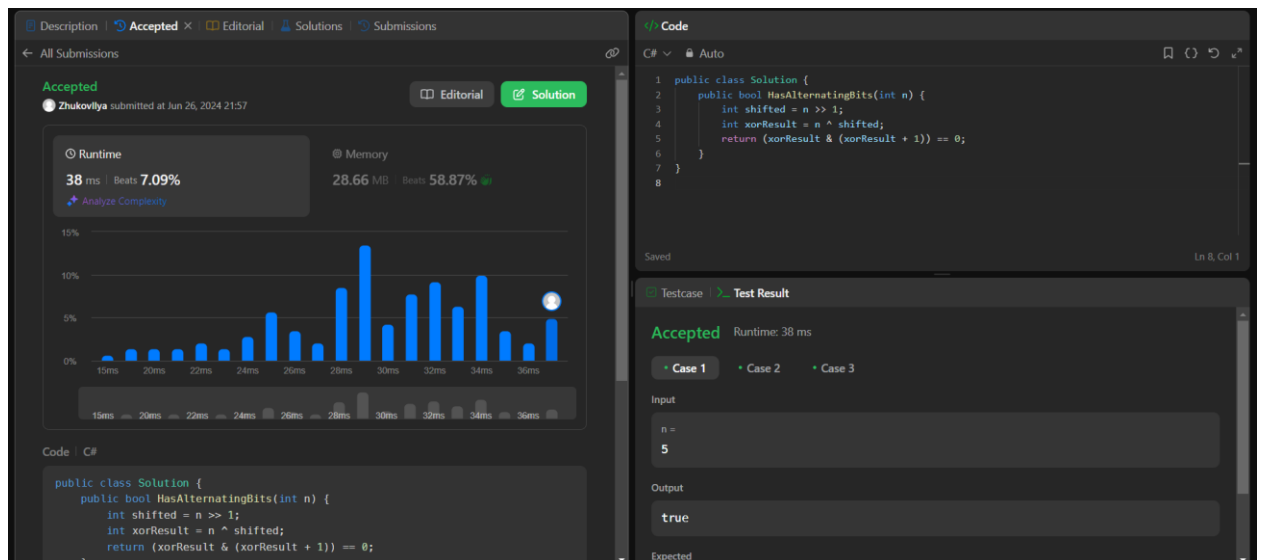
Explanation: The binary representation of 7 is: 111.

Example 3:

Input: $n = 11$

Output: `false`

Explanation: The binary representation of 11 is: 1011.



The screenshot displays a coding platform interface. On the left, the 'Description' tab is active, showing the problem statement and a performance graph. The graph plots 'Runtime' (38 ms, 7.09% beats) and 'Memory' (28.66 MB, 58.87% beats) against various test cases. Below the graph, the C# code for the solution is shown. On the right, the 'Code' tab is active, displaying the same C# code. Below the code, the 'Testcase' section shows the 'Test Result' for 'Case 1', which is 'Accepted' with a runtime of 38 ms. The input is `n = 5` and the output is `true`.

```
public class Solution {
    public bool HasAlternatingBits(int n) {
        int shifted = n >> 1;
        int xorResult = n ^ shifted;
        return (xorResult & (xorResult + 1)) == 0;
    }
}
```

Код:

```
public class Solution
{
    public bool HasAlternatingBits(int n)
    {
        int shifted = n >> 1;
        int xorResult = n ^ shifted;
        return (xorResult & (xorResult + 1)) == 0;
    }
}
```