Description | Accepted | Editorial | Solutions | Submissions

1009. Complement of Base 10 Integer

Solved

Easy | Topics | Companies | Hint

The **complement** of an integer is the integer you get when you flip all the `0`'s to `1`'s and all the `1`'s to `0`'s in its binary representation.

- For example, The integer `5` is `"101"` in binary and its **complement** is `"010"` which is the integer `2`.

Given an integer `n`, return *its complement*.

Example 1:

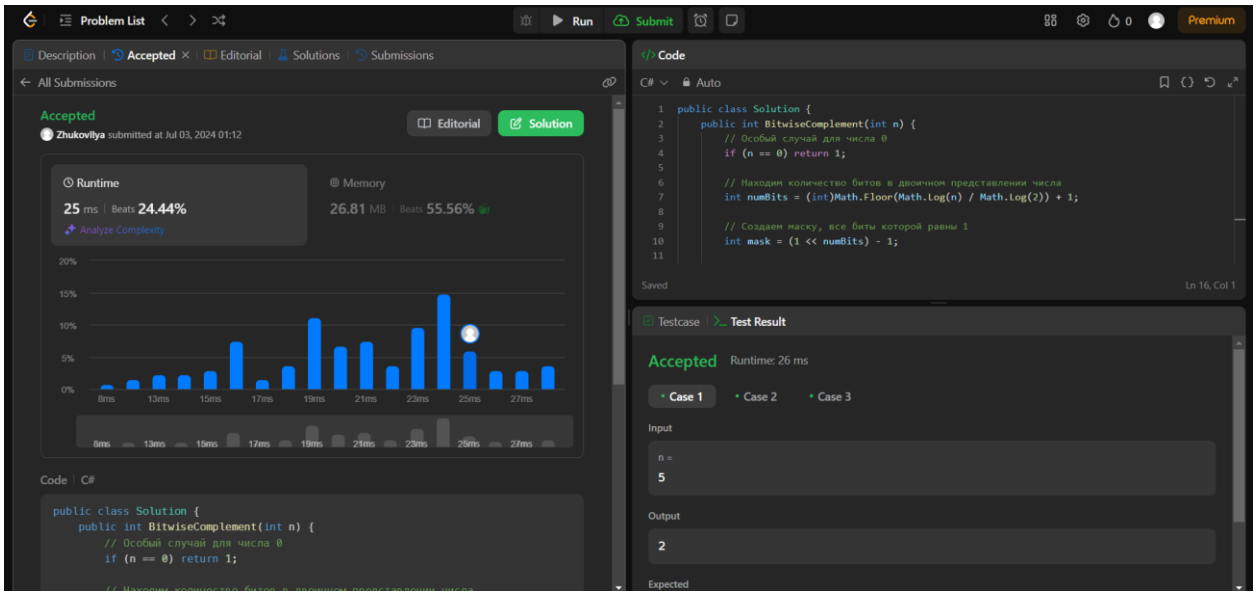
```
Input: n = 5
Output: 2
Explanation: 5 is "101" in binary, with complement "010" in binary, which is 2 in base-10.
```

Example 2:

```
Input: n = 7
Output: 0
Explanation: 7 is "111" in binary, with complement "000" in binary, which is 0 in base-10.
```

Example 3:

```
Input: n = 10
```



Код:

```
using System;

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

```
        // Особый случай для числа 0
        if (n == 0) return 1;

        // Находим количество битов в двоичном представлении числа
        int numBits = (int)Math.Floor(Math.Log(n) / Math.Log(2)) + 1;

        // Создаем маску, все биты которой равны 1
        int mask = (1 << numBits) - 1;

        // Применяем XOR для получения комплемента
        return n ^ mask;
    }
}
```