

Topics to discuss

Bit manipulation Problem - 12
Binary Numbers with Alternating Bits.



YouTube @StartPracticing

693. Binary Number with Alternating Bits

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.

```

class solution {
    public boolean hasAlternatingBits (int n) {
        while (n > 0) {
            if ((n & 1) == ((n >> 1) & 1)) {
                return false;
            }
            n = n >> 1;
        }
        return true;
    }
}

```

$n = 5 \Rightarrow \text{True}$

$n = 101$

while ①

$(n \& 1) == (n \gg 1) \& 1$

$1 == (101 \gg 1) \& 1$

$1 == 10 \& 1$

$1 == 0 \times$

$n \gg 1$

$n = 101 \gg 1 = 10$

while ② $n = 10$

$10 \& 1 == 1 \& 1$

$0 == 1 \times$

$n = 10 \gg 1 = 1$

while ③ $n = 1$

$1 \& 1 == 0 \& 1$

$1 == 0 \times$

$n = 1 \gg 1 = 0$

Follow Now



Start Practicing



i._am._arfin



Arfin Parween



arfin-parween