

201. Bitwise AND of Numbers Range

Medium

👍 335

💬 43

🤍 Favorite

🔗 Share

Given a range $[m, n]$ where $0 \leq m \leq n \leq 2147483647$, return the bitwise AND of all numbers in this range, inclusive.

Example 1:

Input: $[5, 7]$

Output: 4

Example 2:

Input: $[0, 1]$

Output: 0

Accepted 75,836

Submissions 214,642

Seen this question in a real interview before?

Yes

No

```
package Algorithm;
```

```
public class L201 {
```

```
    /*
```

```
    * 题意：从m到n之间的数字按位与，得到的数字是哪个？？
```

```
    *
```

```
    * 解答，比如m = 5 n = 7
```

```
    * 总共有三个数字 101 110 111
```

```
    * 那么与出来的数字为100 = 4
```

```
    * 即目的是找出这几个数字左边公共的部分即可
```

```
    * d为32位的最大数字 111111....1111 往左移一位是111....1110
```

```
    * 这样一直与m和n与就可以得到最左边的公共部分。
```

```
    */
```

```
    public int rangeBitwiseAnd(int m, int n) {
```

```
        int d = Integer.MAX_VALUE;
```

```
        while((m & d) != (n & d)) {
```

```
            d <<= 1;
```

```
        }
```

```
        return m & d;
```

```
    }
```

```
}
```