

一、题目说明

题目338. Counting Bits, 给定一个正整数 n , 返回从0- n 之间所有数组对应二进制数包含1的个数。难度是Medium! 复杂度要求是 $O(n)$ 。

二、我的解答

这个题目用dp, 其实是非常简单的:

```
class Solution{
public:
    vector<int> countBits(int num){
        vector<int> res(num+1,0);
        if(num>0) res[1]=1;
        for(int i=2;i<=num;i++){
            int tmp = i%2;
            res[i] = res[i/2] + tmp;
        }
        return res;
    }
};
```

性能如下:

```
Runtime: 52 ms, faster than 93.90% of C++ online submissions for Counting Bits.
Memory Usage: 9.6 MB, less than 63.42% of C++ online submissions for Counting Bits.
```

三、优化措施

无