

Reto Semestral pt.- 3

Problema 1 (Easy)

Description

Solution

Submissions

Discuss (349)

1025. Divisor Game

Easy 337 922 Add to List Share

Alice and Bob take turns playing a game, with Alice starting first.

Initially, there is a number N on the chalkboard. On each player's turn, that player makes a move consisting of:

- Choosing any x with $0 < x < N$ and $N \% x == 0$.
- Replacing the number N on the chalkboard with $N - x$.

Also, if a player cannot make a move, they lose the game.

Return `true` if and only if Alice wins the game, assuming both players play optimally.

Example 1:

Input: 2

Output: true

Explanation: Alice chooses 1, and Bob has no more moves.

Example 2:

Input: 3

Output: false

Explanation: Alice chooses 1, Bob chooses 1, and Alice has no more moves.

Note:

1. $1 \leq N \leq 1000$

Accepted 49,108 Submissions 74,617

Seen this question in a real interview before? Yes No

Contributor

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Related Topics

Problems

Pick One

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Console Contribute i

Run Code Submit

C++ Autocomplete

```
1 class Solution {
2 public:
3     bool divisorGame(int N) {
4         return (N%2 == 0) ? true:false;
5     }
6 };
```

Your previous code was restored from your local storage. [Reset to default](#)

Success [Details >](#)

Runtime: 0 ms, faster than 100.00% of C++ online submissions for Divisor Game.

Memory Usage: 6.2 MB, less than 100.00% of C++ online submissions for Divisor Game.

Next challenges:

- Count The Repetitions
- Odd Even Jump
- Prime Arrangements

Show off your acceptance: [f](#) [t](#) [in](#)

Time Submitted	Status	Runtime	Memory	Language
a few seconds ago	Accepted	0 ms	6.2 MB	cpp

Problema 2 (Medium)

Description

Solution

Submissions

Discuss (999+)

338. Counting Bits

Medium 2262 143 Add to List Share

Given a non negative integer number **num**. For every numbers **i** in the range **0 ≤ i ≤ num** calculate the number of 1's in their binary representation and return them as an array.

Example 1:

Input: 2
Output: [0,1,1]

Example 2:

Input: 5
Output: [0,1,1,2,1,2]

Follow up:

- It is very easy to come up with a solution with run time $O(n \cdot \text{sizeof}(\text{integer}))$. But can you do it in linear time $O(n)$ /possibly in a single pass?
- Space complexity should be $O(n)$.
- Can you do it like a boss? Do it without using any builtin function like `__builtin_popcount` in c++ or in any other language.

Accepted 239,305 Submissions 354,725

Seen this question in a real interview before?

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Related Topics

Similar Questions

Show Hint 1

Show Hint 2

Show Hint 3

C++

Autocomplete

```
1 class Solution {
2 public:
3     vector<int> countBits(int num) {
4         vector<int> iR;
5
6         for(int i=0;i<=num;i++){
7             int ans = 0;
8             for(int j=i;j>0;j=j/2){
9                 if(j%2==1)
10                     ans++;
11             }
12             iR.push_back(ans);
13         }
14         return iR;
15     }
16 }
```

Testcase

Run Code Result

Debugger

Accepted

Runtime: 0 ms

Your input

2

Output

[0,1,1]

Expected

[0,1,1]

Console

How to create a testcase

Run Code

Submit

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Runtime: 8 ms, faster than 88.50% of C++ online submissions for Counting Bits.

Memory Usage: 8.4 MB, less than 100.00% of C++ online submissions for Counting Bits.

Next challenges:

Number of 1 Bits

Show off your acceptance:

Time Submitted	Status	Runtime	Memory	Language
a few seconds ago	Accepted	8 ms	8.4 MB	cpp

Problema 3 (Medium)

DescriptionSolutionSubmissionsDiscuss (783)

96. Unique Binary Search Trees

Medium2878107Add to ListShare

Given n , how many structurally unique **BST's** (binary search trees) that store values 1 ... n ?

Example:

Input: 3

Output: 5

Explanation:

Given $n = 3$, there are a total of 5 unique BST's:

13321

3

2

1

1

3

2

2

1

2

1

3

2

Accepted 267,393Submissions 528,543

Seen this question in a real interview before?

YesNo

Contributor

Companies

Related Topics

Similar Questions

C++Autocomplete

```
1 class Solution {
2 public:
3     int numTrees(int n) {
4         long long int iR[n+1];
5         iR[0]=1;
6         iR[1]=1;
7
8         for (int i=2;i<=n;i++){
9             iR[i] = 0;
10            for (int j=0;j<i;j++){
11                iR[i]=iR[j]*iR[i-j-1];
12            }
13        }
14        return iR[n];
15    }
16 }
```

TestcaseRun Code ResultDebugger

AcceptedRuntime: 0 ms

Your input3

Output5

Expected5

Diff

Problems

Pick One

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ConsoleHow to create a testcase

Run CodeSubmit




Success Details >

Runtime: 0 ms, faster than 100.00% of C++ online submissions for Unique Binary Search Trees.

Memory Usage: 6.1 MB, less than 100.00% of C++ online submissions for Unique Binary Search Trees.

Next challenges:

Unique Binary Search Trees II

Show off your acceptance:   

Time Submitted	Status	Runtime	Memory	Language
a few seconds ago	Accepted	0 ms	6.1 MB	cpp
4 minutes ago	Time Limit Exceeded	N/A	N/A	cpp

Problema 4 (Hard)

Description

Solution

Submissions

Discuss (129)

1402. Reducing Dishes

Hard 132 40 Add to List Share

A chef has collected data on the `satisfaction` level of his `n` dishes. Chef can cook any dish in 1 unit of time.

Like-time coefficient of a dish is defined as the time taken to cook that dish including previous dishes multiplied by its satisfaction level i.e. `time[i] * satisfaction[i]`

Return the maximum sum of *Like-time coefficient* that the chef can obtain after dishes preparation.

Dishes can be prepared in **any** order and the chef can discard some dishes to get this maximum value.

Example 1:

Input: `satisfaction = [-1,-8,0,5,-9]`

Output: 14

Explanation: After Removing the second and last dish, the maximum total *Like-time coefficient* will be equal to $(-1 \times 1 + 0 \times 2 + 5 \times 3 = 14)$. Each dish is prepared in one unit of time.

Example 2:

Input: `satisfaction = [4,3,2]`

Output: 20

Explanation: Dishes can be prepared in any order, $(2 \times 1 + 3 \times 2 + 4 \times 3 = 20)$

Example 3:

Input: `satisfaction = [-1,-4,-5]`

Output: 0

Explanation: People don't like the dishes. No dish is prepared.

Example 4:

Input: `satisfaction = [-2,5,-1,0,3,-3]`

Output: 35

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

```
class Solution {
public:
    int maxSatisfaction(vector<int>& satisfaction) {
        long long int ac=0,curr=0,iR=0;

        sort(satisfaction.begin(),satisfaction.end());

        for (int i=satisfaction.size()-1;i>=0;i--){
            curr += ac+satisfaction[i];
            ac += satisfaction[i];
            iR = max(curr,iR);
        }
        return iR;
    }
};
```

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Testcase

Run Code Result

Debugger

Accepted

Runtime: 0 ms

Your input

[-1,-8,0,5,-7]

Output

14

Diff

Expected

14

Problems

Pick One

Prev

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Next

Console

How to create a testcase

Run Code

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Success Details >

Runtime: 4 ms, faster than 93.45% of C++ online submissions for Reducing Dishes.

Memory Usage: 8.1 MB, less than 100.00% of C++ online submissions for Reducing Dishes.

Next challenges:

- Count Numbers with Unique Digits
- Maximum Sum BST in Binary Tree
- Linked List in Binary Tree

Show off your acceptance:   

Time Submitted	Status	Runtime	Memory	Language
a few seconds ago	Accepted	4 ms	8.1 MB	cpp