

Google Code Jam solved

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Preface

Book containing solutions of past editions of Google code Jam. In the theory part I will describe some non trivial data structures employed, while every next part will be a particular year of Code Jam.

PART

1

THEORY

CHAPTER 1

DATA STRUCTURES

Fairy tales are more than true:
not because they tell us that
dragons exist, but because they
tell us dragons can be beaten.

C.K. CHESTERTON

Definition 1

My definition

Theorem 1

$2+2=4$

PART

2

CODE JAM 2019

1.1 Qualification round

1.1.1 Foregone solution

Problem 1

Suppose you have an integer N . Split N in two integers A and B such that $N = A + B$, in such a way that 4 is not contained nor in A nor in B . If there is not a 4 in the integer N , then A or B can be 0.

Trick: $N = N + 0$, remove unity from 4's in N and add them in the right place in the vector of 0's.

```
function solution(n::Int)
    #Solution with power
    n_string = string(n)
    N = length(n_string)
    B = 0
    for i = 1:N
        if n_string[N-i+1] == '4'
            n = n - 2*10^(i-1)
            B = B + 2*10^(i-1)
        end
    end
    return n,B
end

function solution(n::Int)
    #Solution with joininig
    n_string = string(n)
    x = zeros{Int,0}
    for i = 1:length(n_string)
        if n_string[i] == '4'
            append!(x,1)
        else
            append!(x,0)
        end
    end
end
```

```
        end

        B = parse(Int, join(x))
        A = n - B
        return A, B
    end

T = parse(Int, readline())
for i = 1:T
    n = parse(Int, readline())
    a, b = solution(n)
    println("Case #\$i: \$a \$b")
end
```