Day 5 - Numbers and String

27 June 2022 08:57

$n = 1234$

$rev = 0$

$$\begin{array}{cccc} 1 & 2 & 3 & 4 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 1 & 2 & 3 & 4 \\ \times & \times & \times & \times \\ 1000 & 100 & 10 & 1 \\ \hline \end{array}$$

$$rev = \begin{array}{cccc} 4 & 3 & 2 & 1 \\ \times & \times & \times & \times \\ 1000 & 100 & 10 & 1 \\ \hline \end{array}$$

4324

$1 \quad 2 \quad 3 \quad 4$

$$\begin{array}{r} 1234 \\ -\ 1230\cancel{4} \\ \hline 0004 \\ \hline \end{array}$$

$1234 \% 10 = 4$

$1234 \% 100 = 34$

$1234 \downarrow 123$

$rev += 4 \swarrow 4$

$1234/10 = 123.\cancel{4}$

$= 123$

$n = 1234$

123

12

1

0

$\%$

$/$

$rev = 0$

$= (0 \times 10) + 4 = 4$

$= (4 \times 10) + 3 = 43$

$= (43 \times 10) + 2 = 432$

$= (432 \times 10) + 1 = 4321$

$\boxed{n > 0}$

$n =$

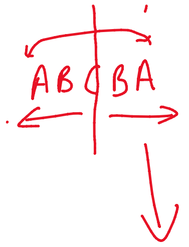
$n =$

$\boxed{n > 0}$

last = n%10;

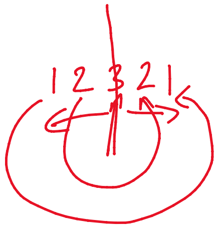
n = n/10;

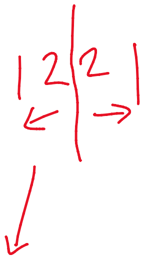
rev=(rev×10)+last;



True

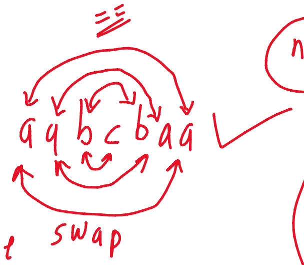
False





Int

O(n/2), O(n)



n/2

s = aba

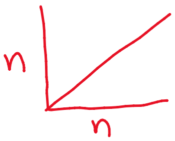
rev = aba

(s == rev) T
f

space = O(n)

s.size = n

rev.size = n O(n)space

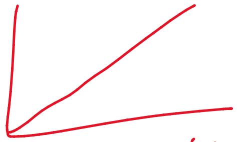


space = O(n)

s
1m → rev
1m
O(n)

s = abcba

rev = abcba



Time = O(n)

5
abcba
false
==

n/2

2|5

=2

fabonachi

1, 1, 2, 3, 5, 8, 13, 21, 34, - - - -

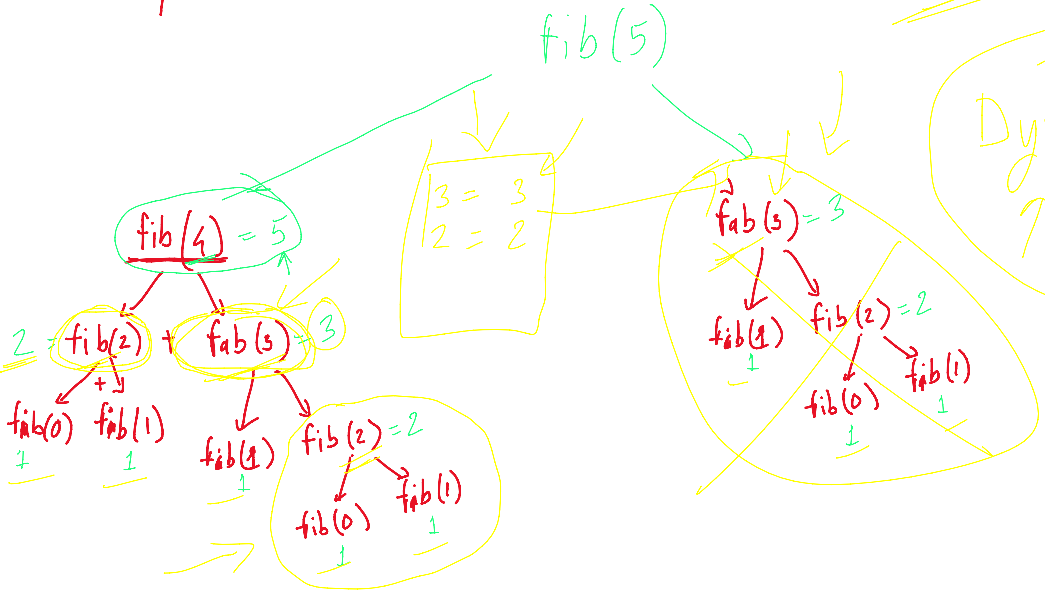
0 2 3 4

O(2^n)

$O(2^n)$,

$O(n)$

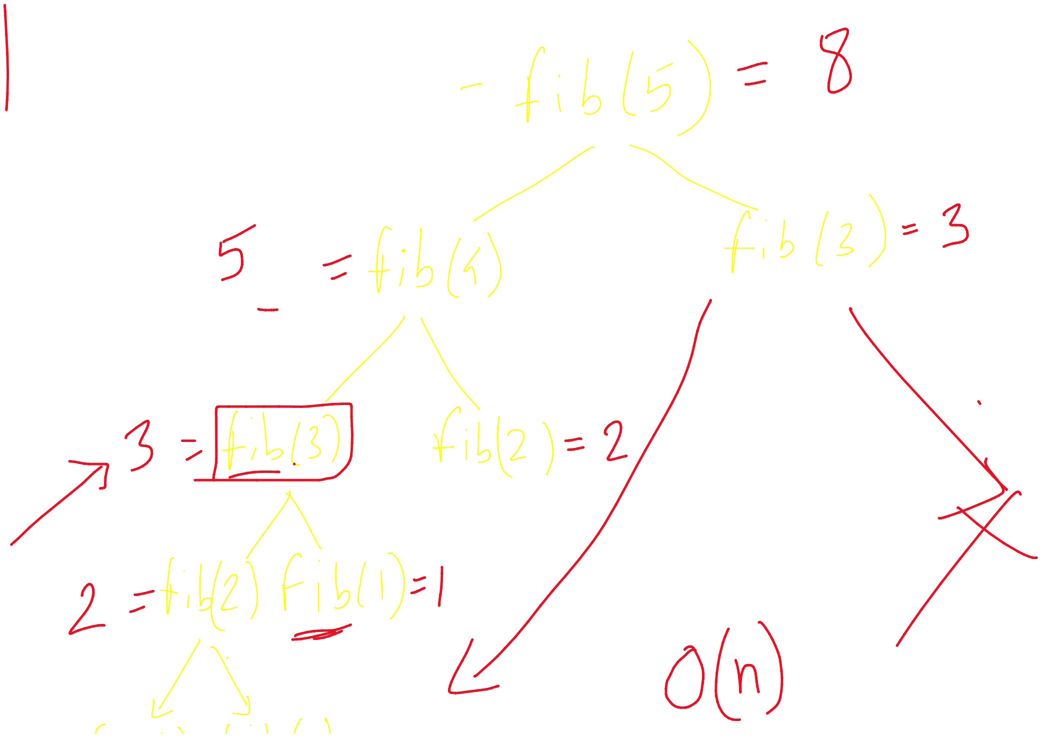
Dynamic Programming



index

val

index	val
0	1
1	1
2	2
3	3
4	5
5	8
6	-1



6 (-1) ✓

fib(1) fib(0)
1 1

O(n)

1,1, 2, 3, 5, 8, 13, 21, 34 . . . .

prev2 prev1 curr

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curr = prev1 + prev2;
prev2 = prev1
prev1 = curr;
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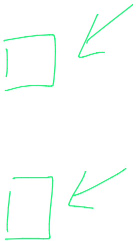
0,1,2

1 hours → 2

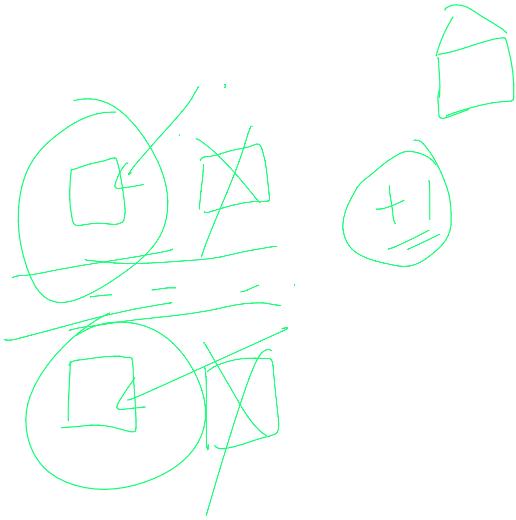
2xn = 2

2x2 → 4



4

2



$(2 + 1) = 3$

$3 \times 3 = 9$