n=7

6×10^5

TD: fx^n frame same time cannot exist

stack overflow

6×10^5 fx^n frames same time

Bottom up (Tabulation)

1. Array size

n=7

n+1 size

0	1	2	3	4	5	6	7
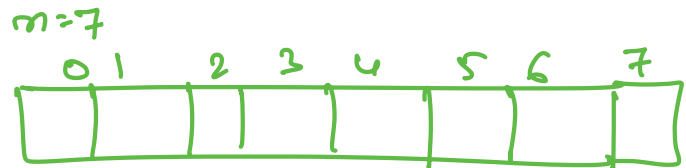
2. TD Base Case
BU already fill

n=7

0	1	2	3	4	5	6	7
0	1						
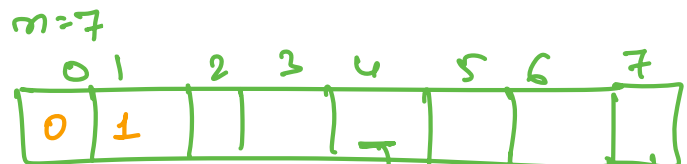
4thfib no?   7thfib no?

3. Cell meaning : ith index → ith fib no.

4. filling dr^n.

0	1	2	3	4	5	6	7
0	1						

5. fill

n=7

4 th

2   3

0	1	2	3	4	5	6	7
0	1	1	2	3	5	8	13
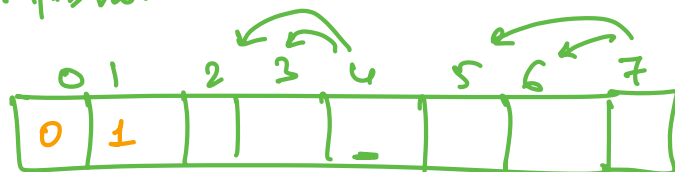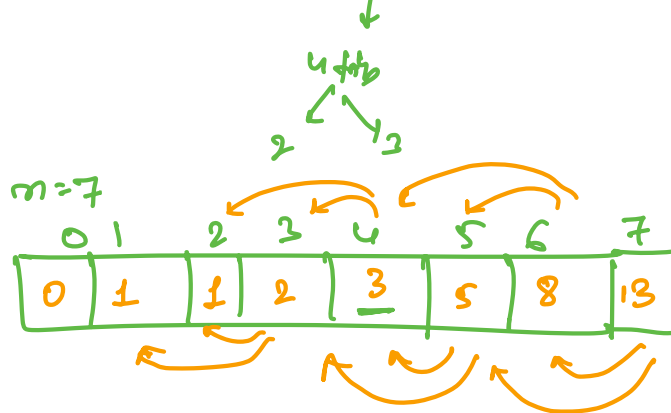
6. find ans?   13

Recursive
    ↓
TD DP (Memoisation)
    ↓
BU DP   (Tabulation)
    ↓

BU SE

Bottom up Space Efficient

SC: O(1)
TC: O(n)

Array: Size 2
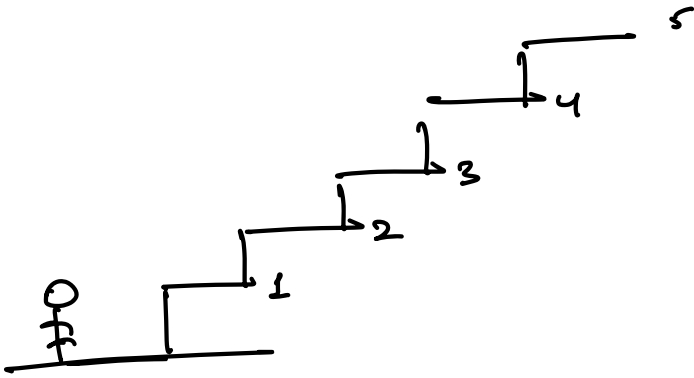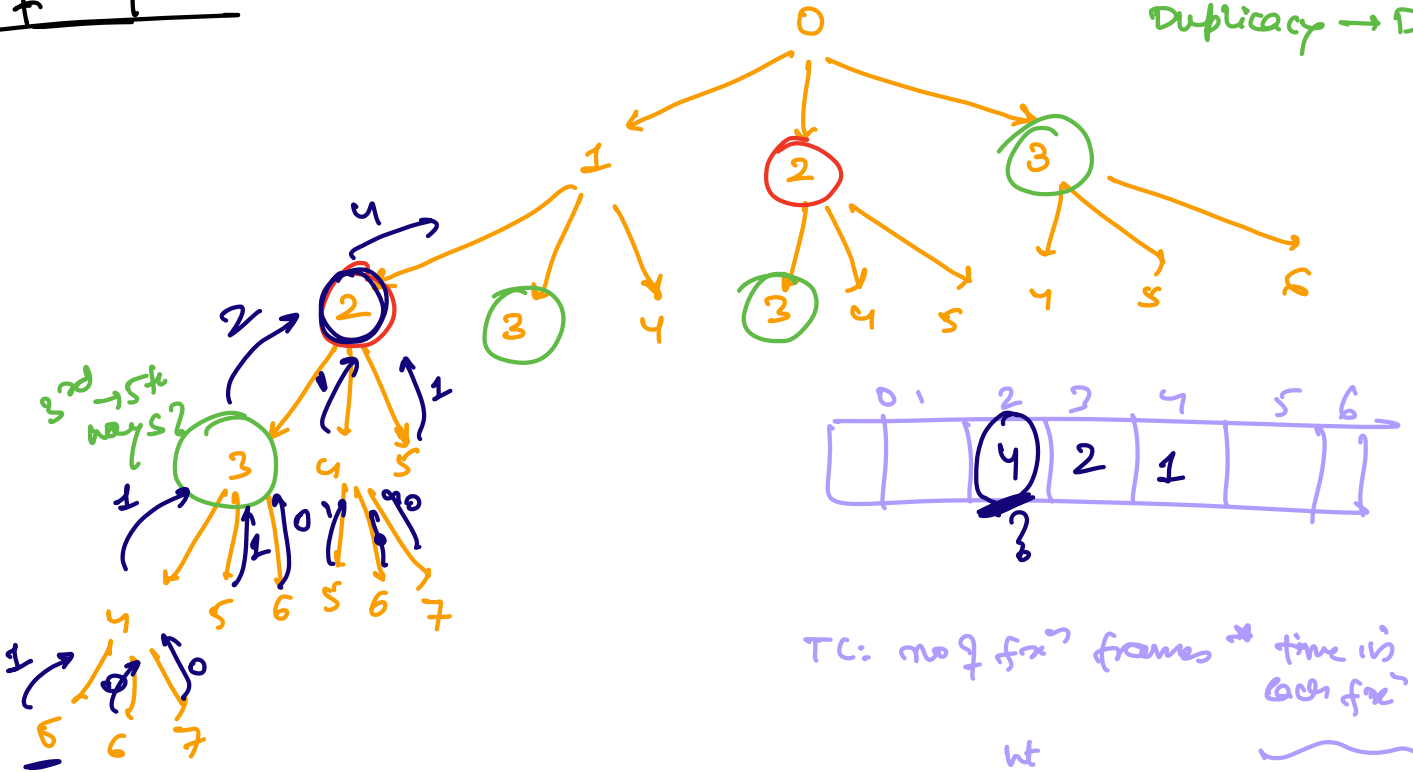2 variables

0	1	2	3	4	5	6	7
0	1	1	2	3	5	8	13

org: | 0 | 1 |

1 | 1 | 1 |

2 | 1 | 2 |

3   0   1
          | 2 | 3 | sum=5

4   0   1
            | 2 | 5 |

5 | 5 | 8 |

6   0   1
                | 8 | 13 |
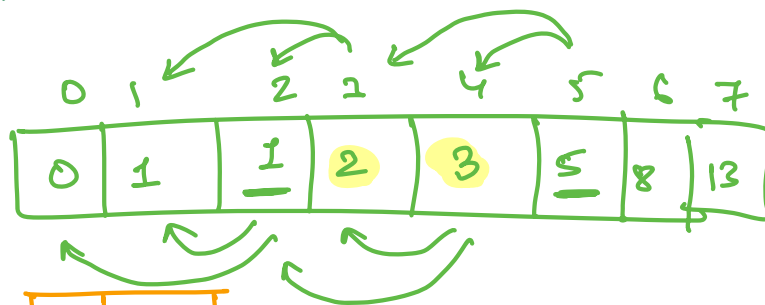
Climbing Stairs

1, 2, 3 Jump

11111
122
32

Duplicacy → DP

0	1	2	3	4	5	6
		4	2	1		

3rd →5th ways 2

TC: no q fxⁿ frames * time is each fxⁿ tram

= calls^ht

= 3ⁿ * 1 = O(8ⁿ)