$n = 4$

1,1,1,1
2,1,1
1,2,1
1,1,2
2,2

$n = 1$ 1

$n = 0$ 1

$n = 3$

2,1
1,2
1,1,1

$n = 2$

1,1
2

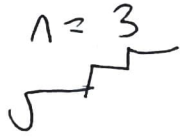
ways(n) = # ways($n-1$) + # ways($n-2$)

base case: $n = 0$ or $1 = 1$ way

☒ use dp

Any # of steps

1, 2, 3



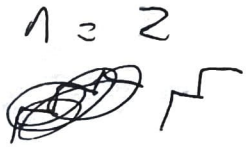
n = 3

3
1, 2
2, 1
1, 1, 1

4

n = 4

3, 1
1, 3
2, 2
2, 1, 1
1, 1, 2
1, 2, 1
1, 1, 1, 1



n = 2

1, 1
2

2

n = 1

1

1

n = 0

1

1

$$\#\text{ways}(n) = \sum_{i \in 1,2,3} \#\text{ways}(n-i)$$

List of steps at a time

base case: 0 = 1 way

< 0 = 0