

Recursion

$$f(n) = \begin{matrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ 1, & 1, & 2, & 3, & 5, & 8, & 13, & 21 \end{matrix}$$

100

n
 100^{th}

$n-1$
 99^{th}

$n-2$
 98^{th}

Fibonacci sequence

Recursive definition

$$f(n) = \begin{cases} f(n-1) + f(n-2), & n \geq 2 \\ 1, & n \leq 2 \end{cases}$$

$$\begin{aligned} f(3) &= f(3-1) + f(3-2) \\ &= f(2) + f(1) \\ &= f(2) + 1 \\ &= 1 + 1 = 2 \end{aligned}$$

$$\begin{aligned} f(4) &= f(4-1) + f(4-2) \\ &= f(3) + f(2) \\ &= 2 + 1 = 3 \end{aligned}$$