

Faith

expectation Fibonacci

$f(n) = f(n-1) + f(n-2)$

$f(n)$	0	1	2	3	4	5	6	7	8
n	0	1	2	3	4	5	6	7	8

n^{th} fibonacci no.

$(n-1) \frac{n}{2}$

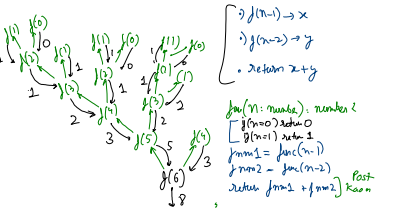
$n-1 + n-2$
 $5-1 + 5-2$

$6-1 \cdot 5 = \frac{6}{2} = 15$

n^{th} fibonacci

Fast

Expectation



func fibonacci(n):

return

3

Fast

Graph

```
function func(n:number) : void {
  if(n == 0) return;
  console.log(n);
  func(n-1);
  console.log(n);
}
```

func(5)

parameters

return type

Base Case

Back

```
function func(n:number) : void {
  if(n == 0) return;
  console.log(n);
  func(n-1);
  console.log(n);
}
```

func(3)

output

n=3

Call Stack

n=3
n=2
n=1
n=0
n=1
n=2
n=3

Recursion \Rightarrow function calling itself

- Execution happens on top of the call stack
- Whenever call a function, added on top of call stack
- Return \Rightarrow remove from call stack

R.A.N

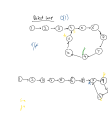
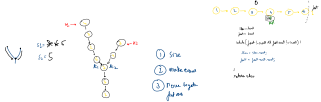
n 1-100

5 4 3 2 1 2 3 4 5

n ... n+1 ... n+2 ... 100, 99, 98, 97, ...

95, 96, 97, 98, 99, 100, 99, 98, 97, 96, 95

Execution



Backward

5 4 3 2 1 2 3 4 5

n=5
n=4
n=3
n=2
n=1
n=0

