

Ques Factorial

Expectation

fact(5)

→ 120

Faith

fact(4)

⇒ 24

Combination

int f = fact(4);

int res = f * 5;

return res;

fact(int n) {
if (n == 0) return 1;

int result = n * fact(n-1);

return result

}

F	1
F	2
F	3
F	4
F(5)	5

Ques power(int a, int b) ⇒ a^b

Expectation

power(2, 10)

⇒ 1024

Faith

power(2, 9)

⇒ 512

Combine

return 2 * power(2, 9)

ps int power(int a, int b)

if (b == 0) return 1;

return power(a, b-1) * a;

(P 2, 10)

↓

P(2, 9)

↓

P(2, 8)

↓

(2, 7)

↓

(2, 6)

↓

(2, 5)

↓

4

↓

2

↓

2

→

2

→

1

→

0

P(2, 10)

↓

P(2, 9)

↓

P(2, 8)

↓

P(2, 7)

↓

P(2, 6)

↓

2

→

2

→

1

→

0

$$2^5$$

$$2^{10} = 2^5 \times 2^5$$

$$10^5 = 10^2 \times 10^2 \times 10$$

$$2^6 \Rightarrow 2^3 \times 2^3$$

$$10^8 = 10^4 \times 10^4$$

$$2^{11} \Rightarrow 2^5 \times 2^5 \times 2$$

$$2^7 \Rightarrow 2^1 \times 2^1 \times 2^1 \times 2^1 \times 2^1 \times 2^1 \times 2^1$$

Expectation	Faith	Combine
$\text{pow}(a, b)$	$\text{pow}(a, b/2)$	$\Rightarrow p = \text{pow}(a, b/2)$ $\text{if } (b \% 2 == 0)$ $\text{res} = p \times p$ $\}$ $\text{else } \{$ $\text{res} \Rightarrow p \times p \times a$ $\}$

Ques Fibonacci

$\rightarrow n^{\text{th}}$ fibonacci

s^{th} fibonacci

0 1 2 3 4 5 6 7 8 9
0, 1, 1, 2, 3, 5, 8, 13, 21, 34

$n^{\text{th}} \rightarrow n-1, n-2$

Expectation

$\text{fib}(5)$

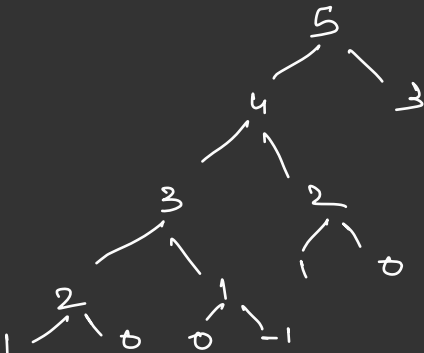
Faith

$\text{fib}(3)$
 $\text{fib}(4)$

Combine

return $\text{fib}(3) + \text{fib}(4)$

$\text{fib}(n-1) + \text{fib}(n-2);$



$\text{fib}(3)$
$\text{fib}(4)$
$\text{fib}(5)$

Ques Print in reverse

Console

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

Expectation

Recursion

Combine

PR(arr, 0)

PR(arr, 1)

PR(arr, 1)
syso(arr[0])

6
7
2
5
3
4
1

6
7
2
5
3
4

PR(int arr[], int n)
if (n == arr.length) return;

PR(arr, n+1);
syso(arr[n]);

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

6
7
2

PR	4	2
PR	3	5
PR	2	3
PR	1	4
PR	0	1