

Laboratorio 8

Problema 1

	Iteración	variable
i	1	$i = \frac{n}{2} + 0 =$
	2	$i = \frac{n}{2} + 1$
	3	$i = \frac{n}{2} + 2$
	4	$i = \frac{n}{2} + 3$
	5	$i = \frac{n}{2} + (5-1)$
		$n = \frac{n}{2} + 5 - 1$
		$n - \frac{n}{2} = 5 - 1$
		$\frac{n}{2} + 1 = 5$

$$\frac{n}{2} + 1 = O(n)$$

j	1	$j = 1 + \frac{n}{2}$
	2	$j = 1 + \frac{n}{2} + 1 = \frac{n}{2} + 2$
	3	$j = \frac{n}{2} + 3$
	4	$j = \frac{n}{2} + 4$
	5	$j = \frac{n}{2} + 5$
		$n = \frac{n}{2} + 5$
		$n - \frac{n}{2} = 5$
		$\frac{n}{2} = 5$

$$\frac{n}{2} = O(n)$$

Iteration

Variable

k

1

k = 2

2¹

2

k = 4

2²

3

k = 8

2³

4

k = 16

2⁴

5

k = 2⁵

n = 2⁵

$\log_2 n = 5$

$$\log_2 n = O(\log n)$$

Problema 2

Base := $O(1)$

Iteración

Variable

1

$i = 1$

2

$i = 2$

3

$i = 3$

4

$i = 4$

K

$i = K$

$n = K$

$n = O(n)$

Iteración

Variable

1

$j = 1$

2

hay break

3

\therefore se detiene ahí

K

$n = O(n)$