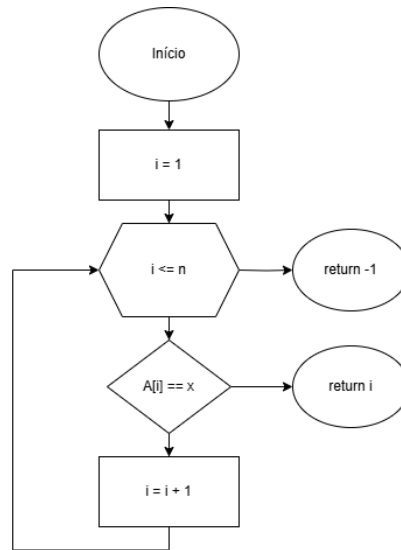


# Comparando Eficiência de Algoritmos

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	Busca Linear	Busca Linear Ordem	Busca Binária
$X \in A$	$5tp_x$	$7tp_x$	$\log_2(n) * 10t - t$
$X = A[1]$	$5t$	$7t$	$\log_2(n) * 10t - t$
$X = A[n]$	$5tn$	$7tn$	$\log_2(n) * 10t - t$
$X \notin A$	$5tn + 3t$	$7tn + 3t$	$\log_2(n) * 10t + 3t$

Busca Linear:



$$X \in A \rightarrow 5px + t - 2t + t = 5px$$

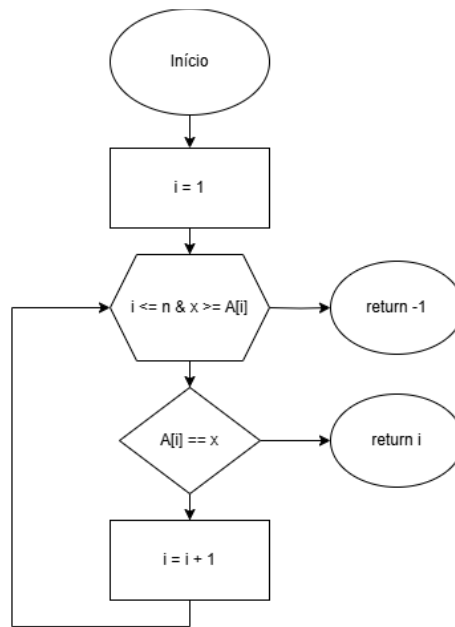
$P_x$  – Número de vezes que faz o loop

$$X = A[1] \rightarrow t + t + t + t + t = 5t$$

$$X = A[n] \rightarrow 5tn + t - 2t + t = 5tn$$

$$X \notin A \rightarrow t + 5tn + t + t = 5tn + 3t$$

Busca Linear em Ordem:



$$X \in A \rightarrow t + 7tp_x - 2t + t = 7px$$

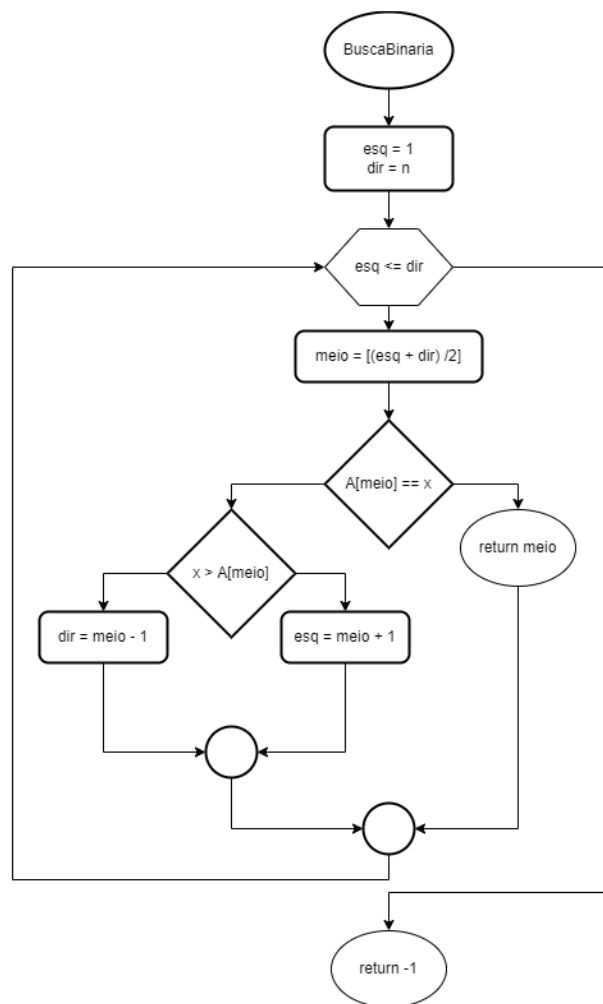
$P_x$  – Número de vezes que faz o loop

$$X = A[1] \rightarrow 7t$$

$$X = A[n] \rightarrow t + 7tn - 2t + t = 7tn$$

$$X \notin A \rightarrow t + 7tn + t + t = 7tn + 3t$$

## Busca Binária:



$$X \in A \rightarrow 2t + \log_2(n) * 10t - 4t + t = \log_2(n) * 10t - t$$

$$X = A[1] \rightarrow 2t + \log_2(n) * 10t - 4t + t = \log_2(n) * 10t - t$$

$$X = A[n] \rightarrow 2t + \log_2(n) * 10t - 4t + t = \log_2(n) * 10t - t$$

$$X \notin A \rightarrow 2t + \log_2(n) * 10t + t + t = \log_2(n) * 10t + 3t$$