

Universidade Federal do Rio Grande do Sul

Laboratório 1

Classificação e Pesquisa de Dados

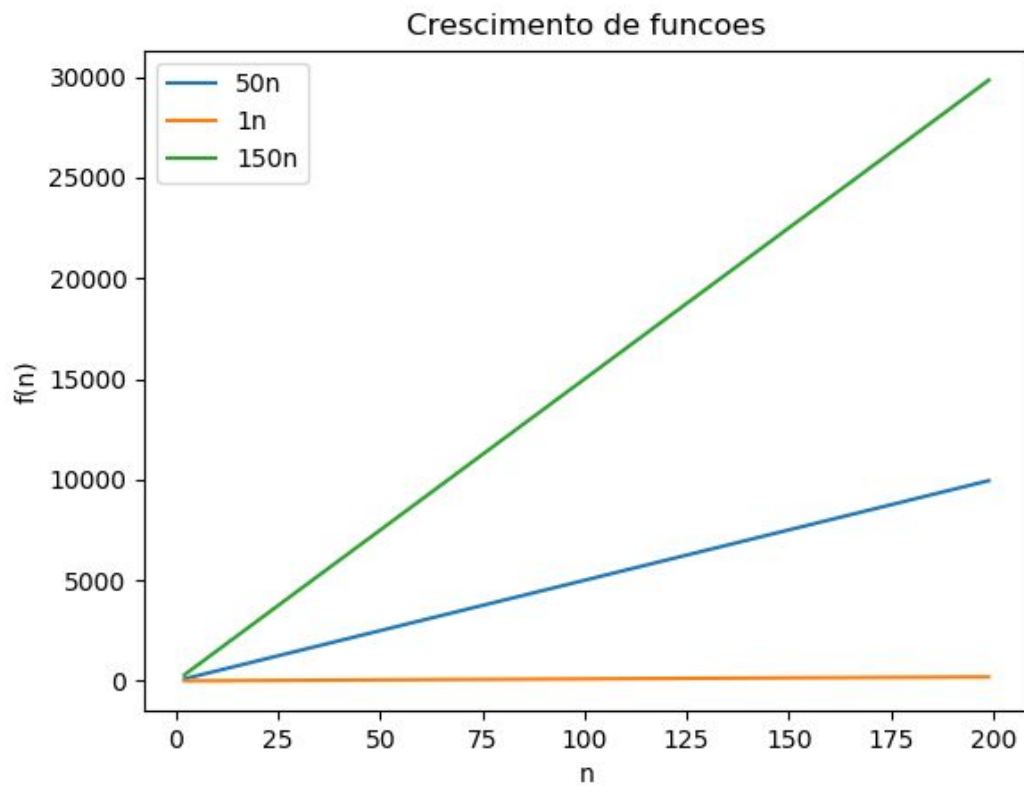
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Porto Alegre
2018

Complexidade de Funções

$50n$	$n^2 + 2n + 10$	$n + \lg n$
$n^3 - 100n^2$	$\frac{2n^2}{3n^2-1}$	$10 n \lg(2n)$

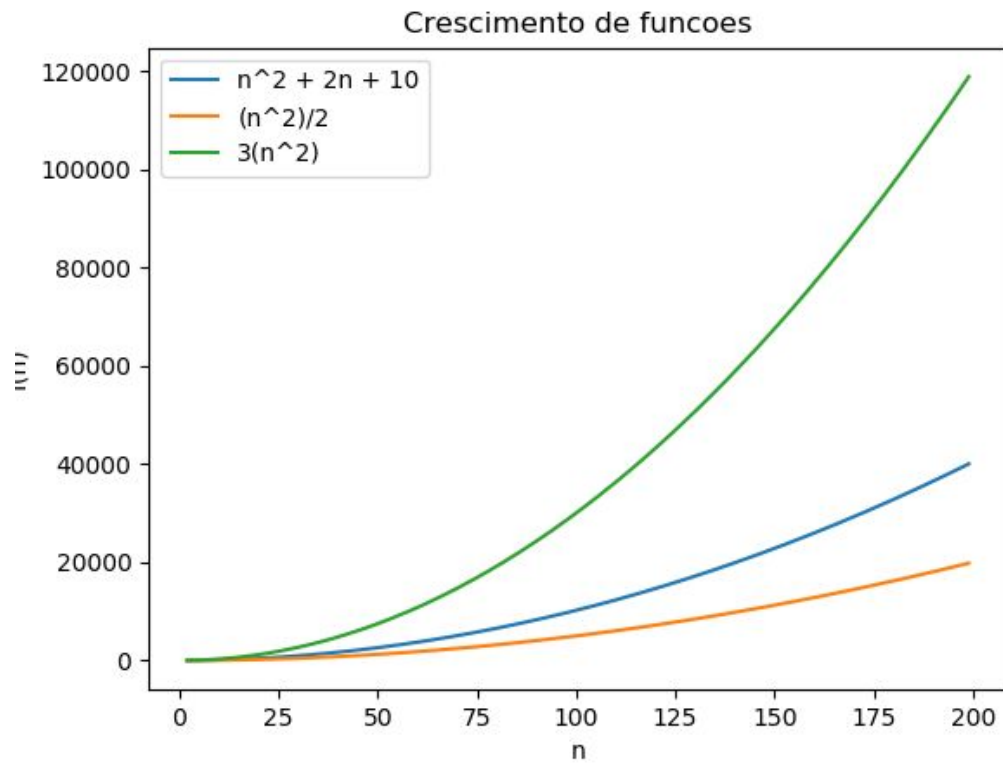
$50n$ (Linear)



Constantes: 1 e 150

$$1n \leq 50n \leq 150n, \text{ para } n \geq 0$$

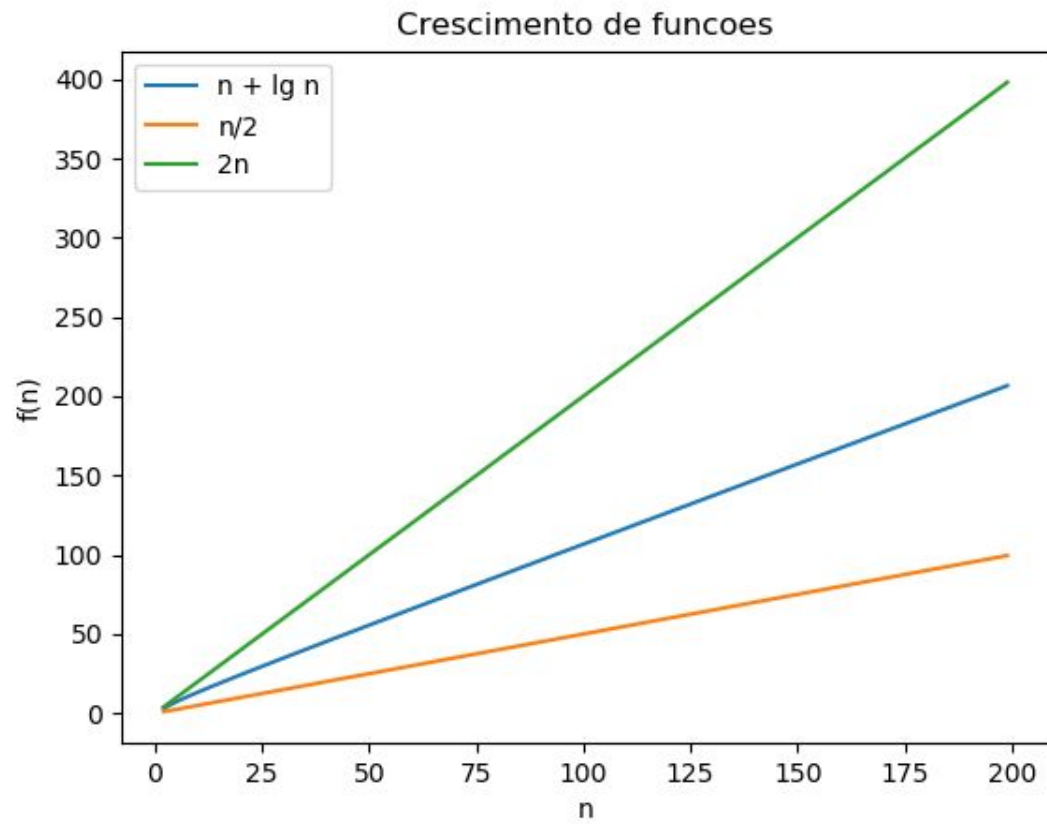
$n^2 + 2n + 10$ (Quadrática)



Constantes: $\frac{1}{2}$ e 3

$$\frac{1}{2}n^2 \leq n^2 + 2n + 10 \leq 3n^2, \text{ para } n \geq 0$$

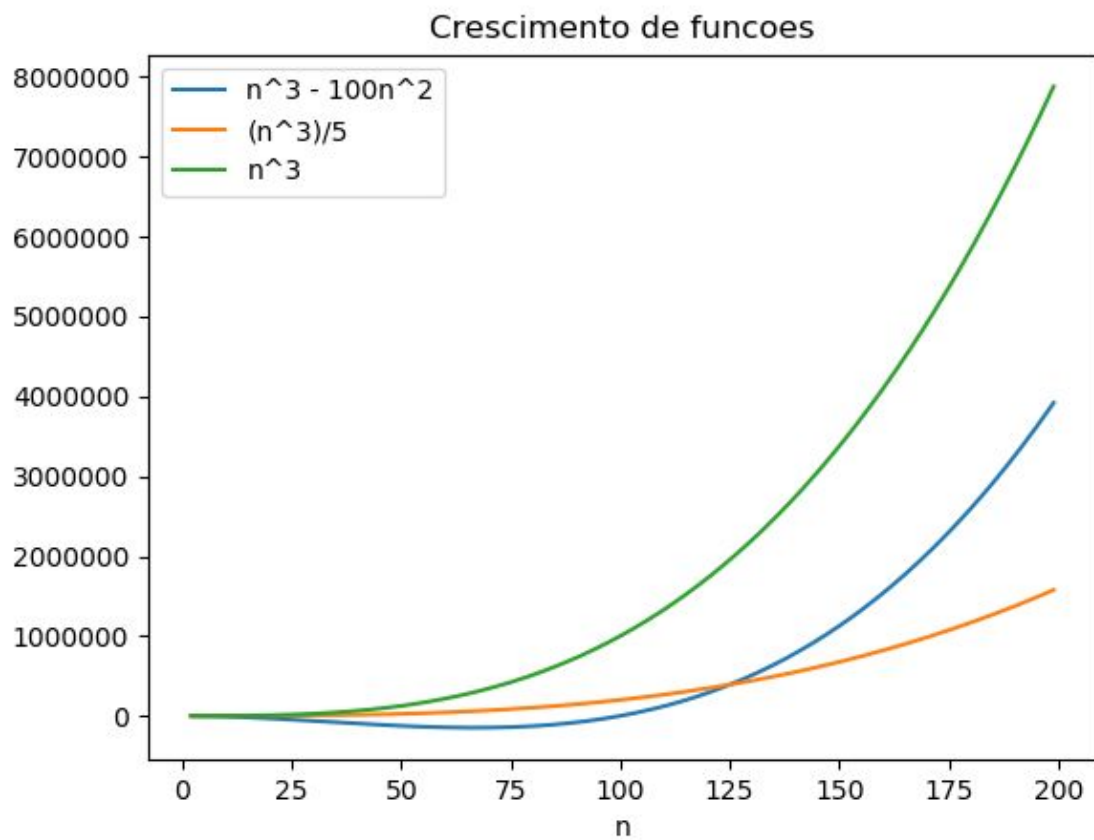
$n + \lg n$ (Linear)



Constantes: $\frac{1}{2}$ e 2

$\frac{1}{2}n \leq n + \lg n \leq 2n$, para $n \geq 0$

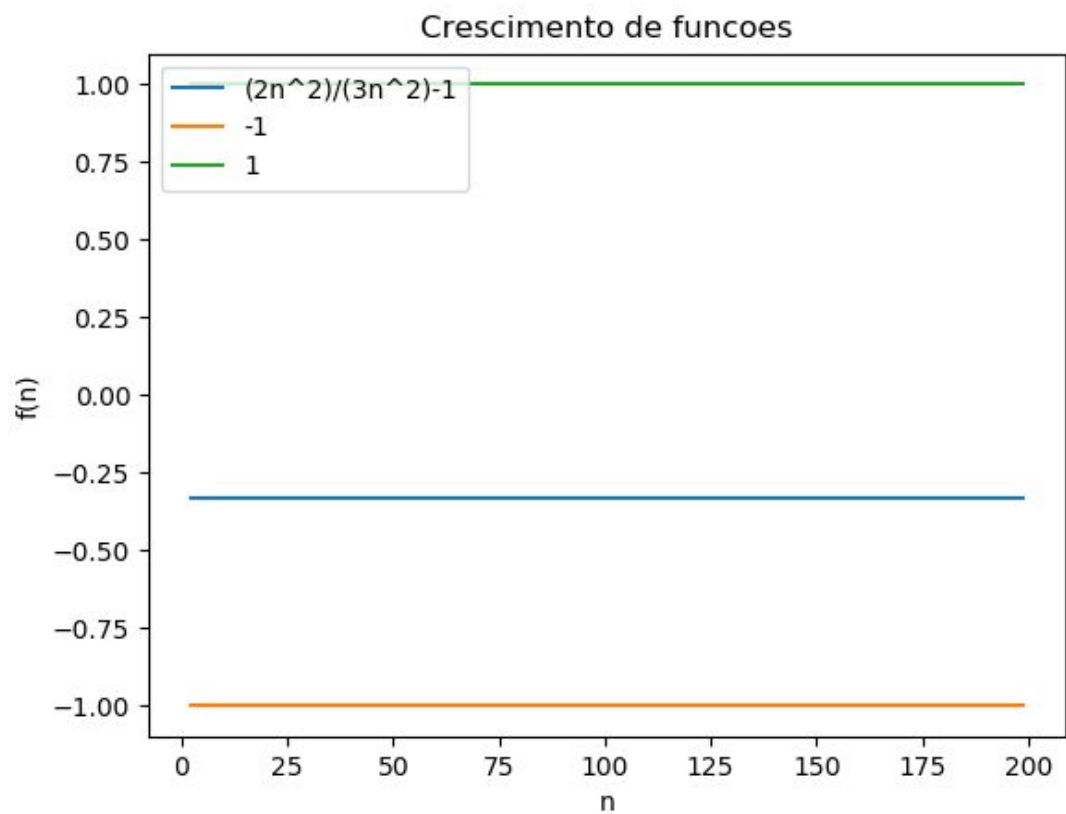
$n^3 - 100n^2$ (Cúbica)



Constantes: $\frac{1}{5}$ e 3

$$\frac{1}{5}n^3 \leq n^3 - 100n^2 \leq n^3, \text{ para } n \geq 125$$

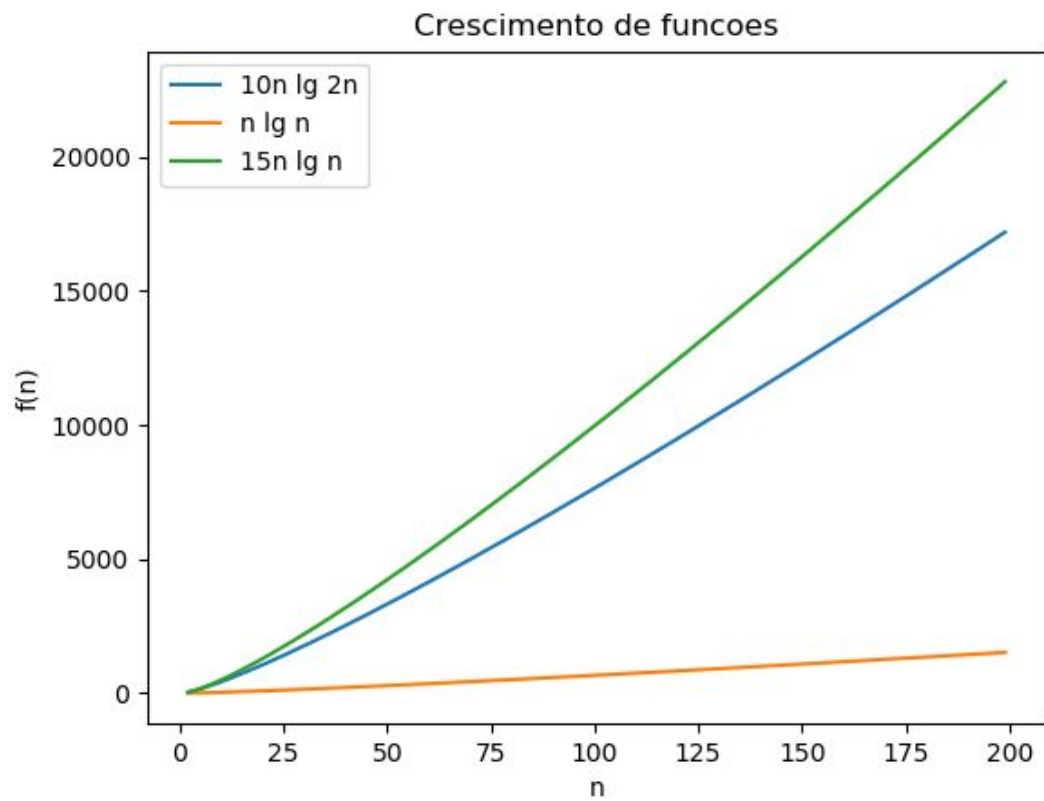
$2n^2 / 3n^2 - 1$ (Constante)



Constantes: -1 e 1

$-1 \leq 2n^2 / 3n^2 - 1 \leq 1$, para $n \geq 0$

$10n \lg 2n$ (Quasilinear)



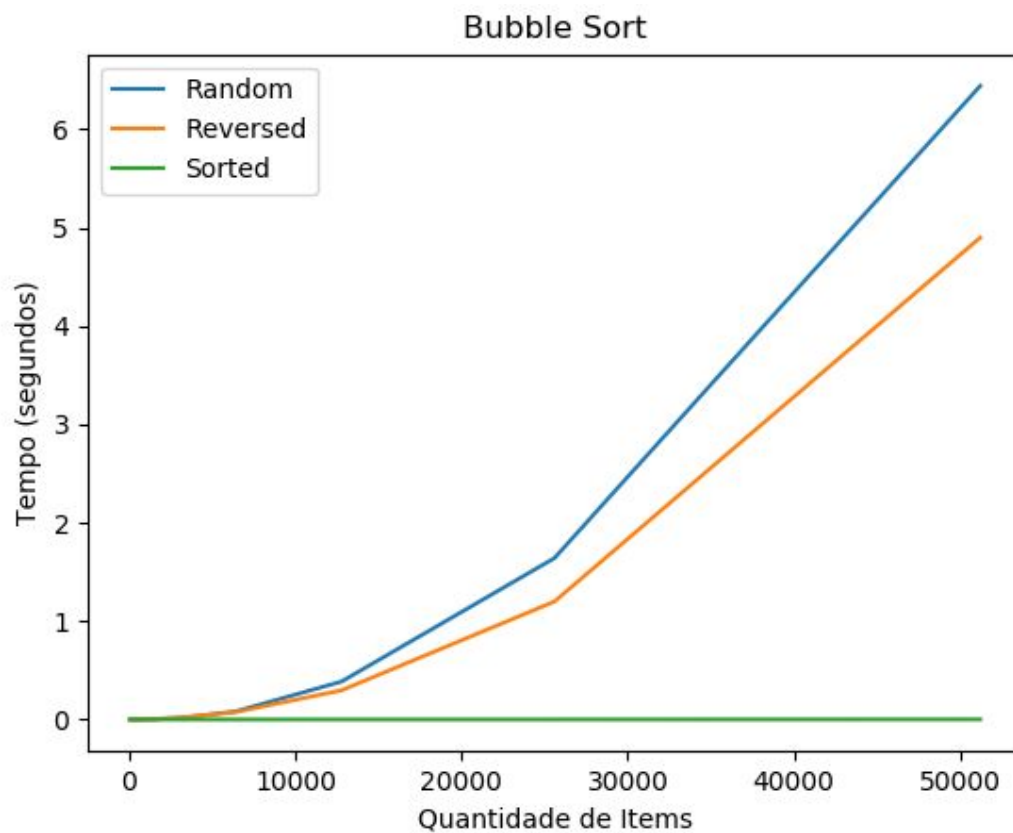
Constantes: 1 e 15

$n \lg n \leq 10n \lg 2n \leq 15n \lg n$, para $n \geq 0$

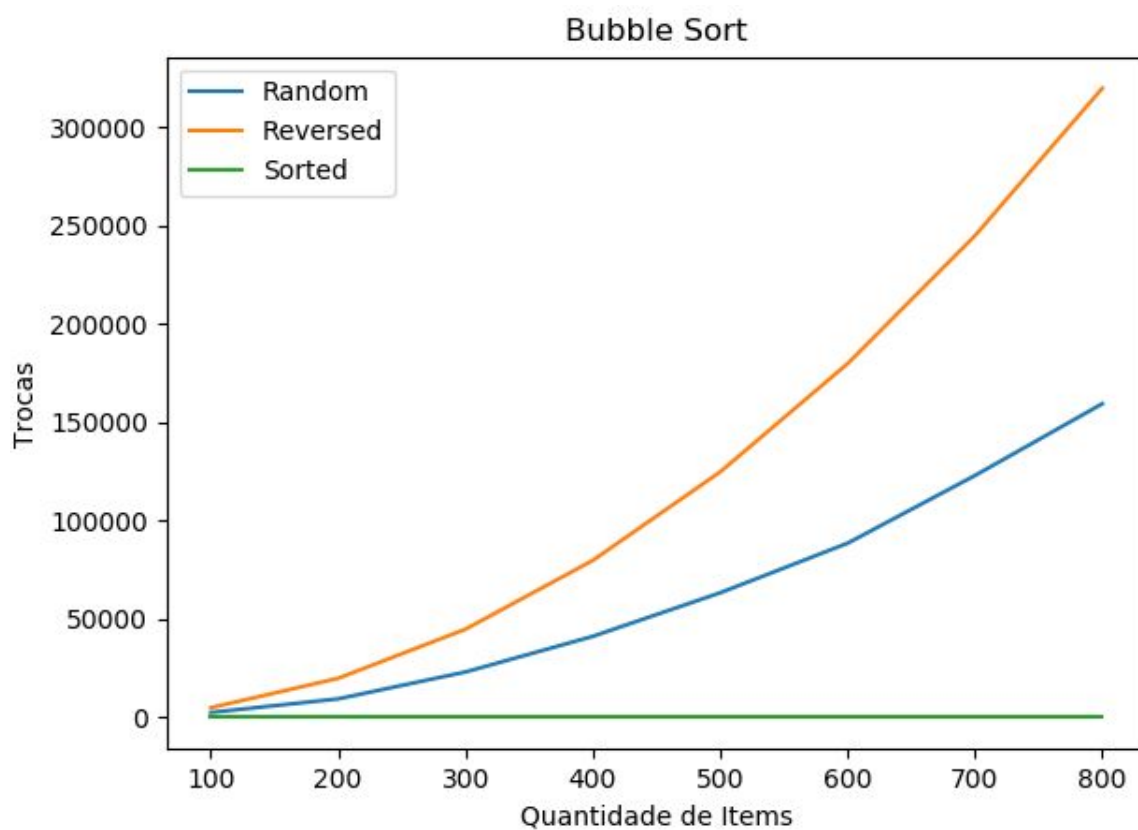
Resultados de Implementação de algoritmos de ordenação

Bubble Sort

Tempo:

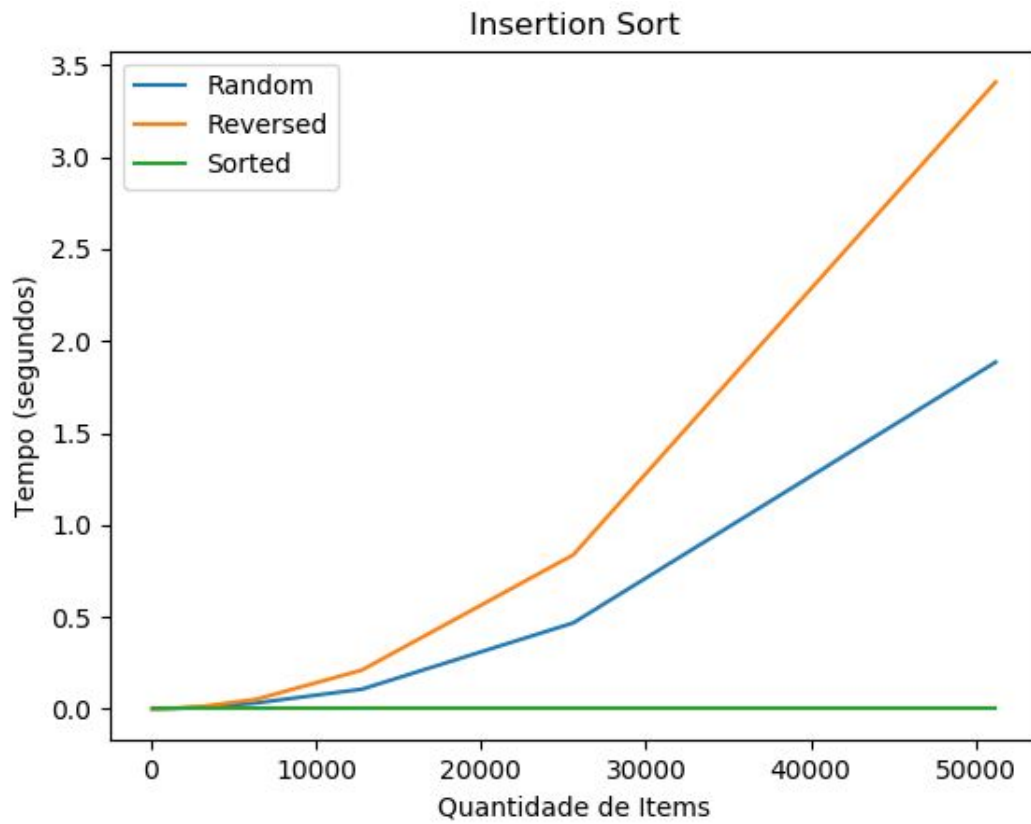


Trocas:

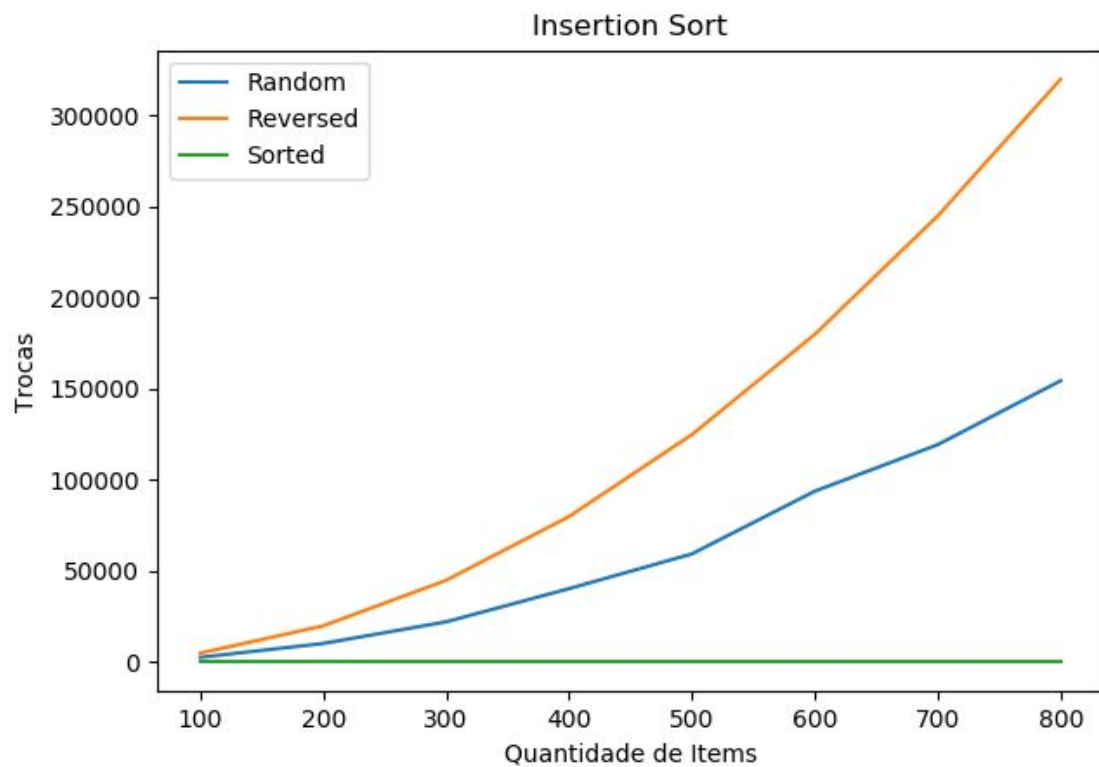


Insertion Sort

Tempo:

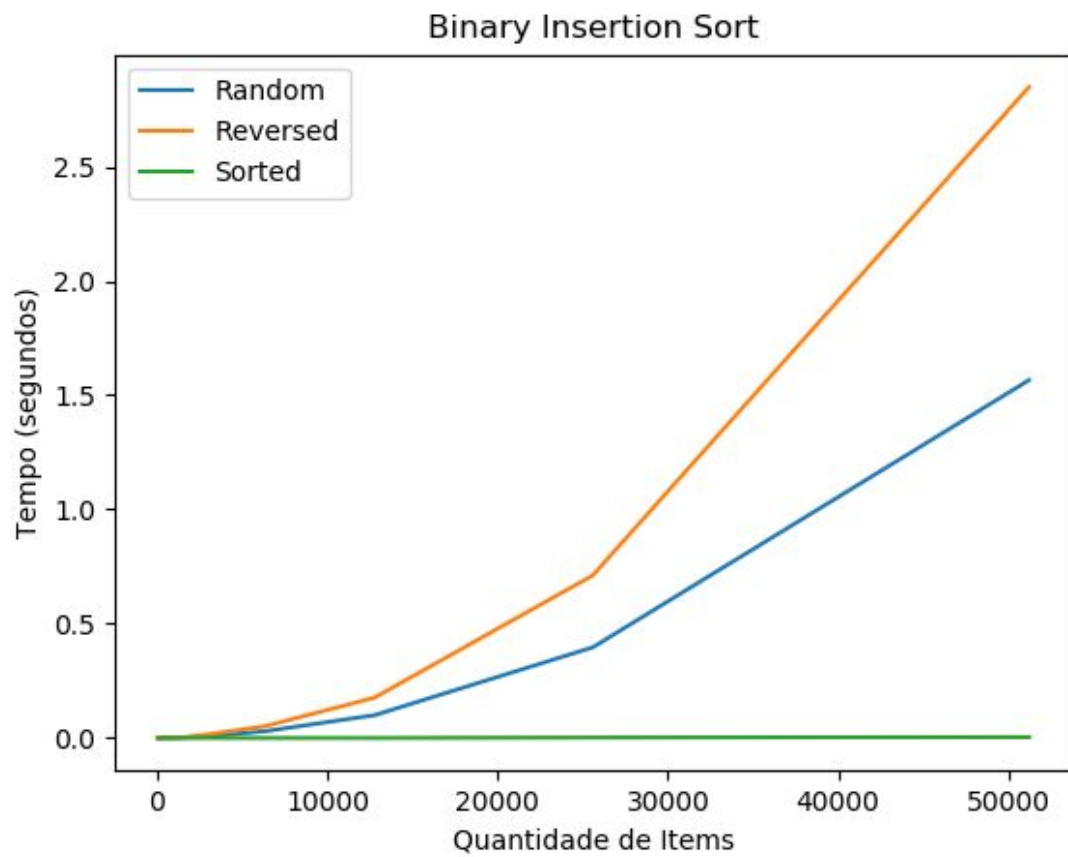


Trocas:

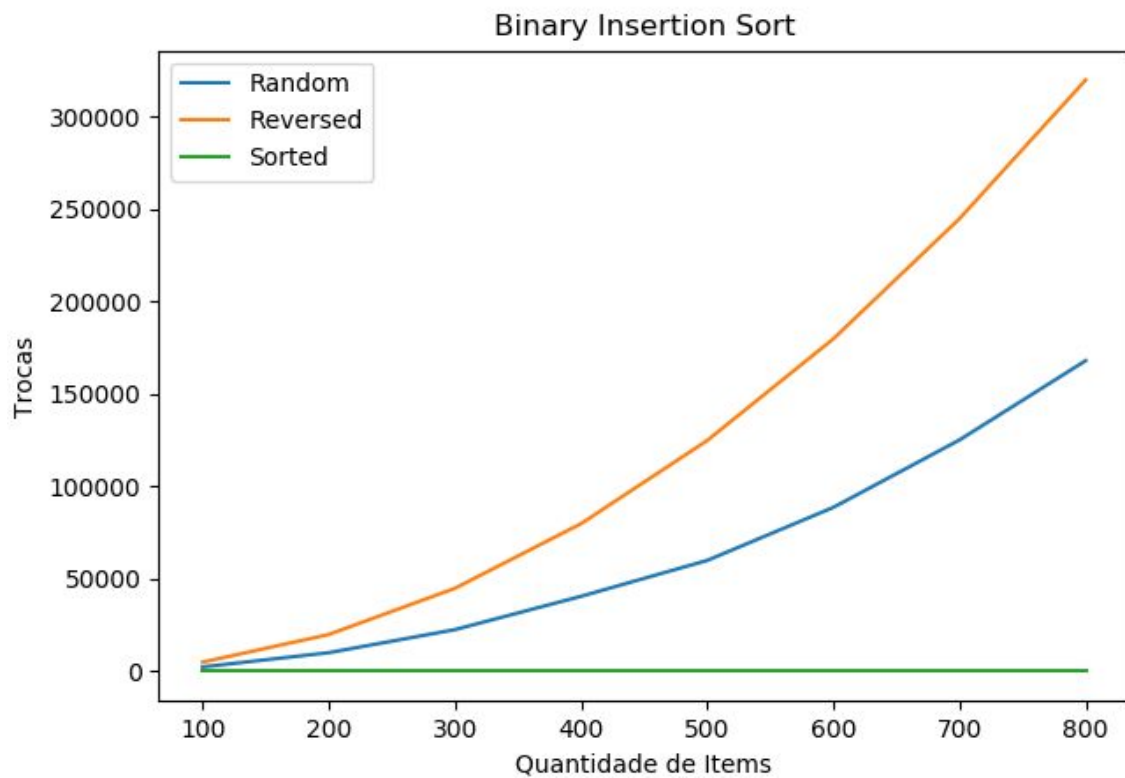


Binary Insertion Sort

Tempo:

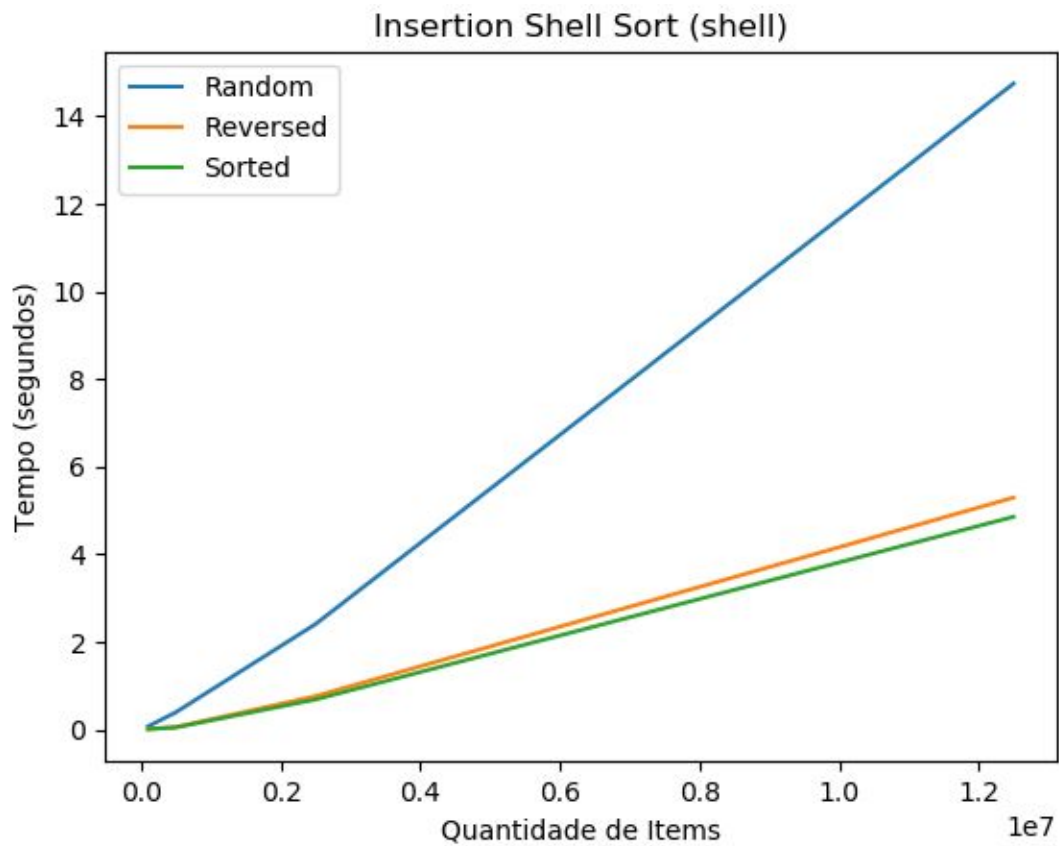


Trocas:

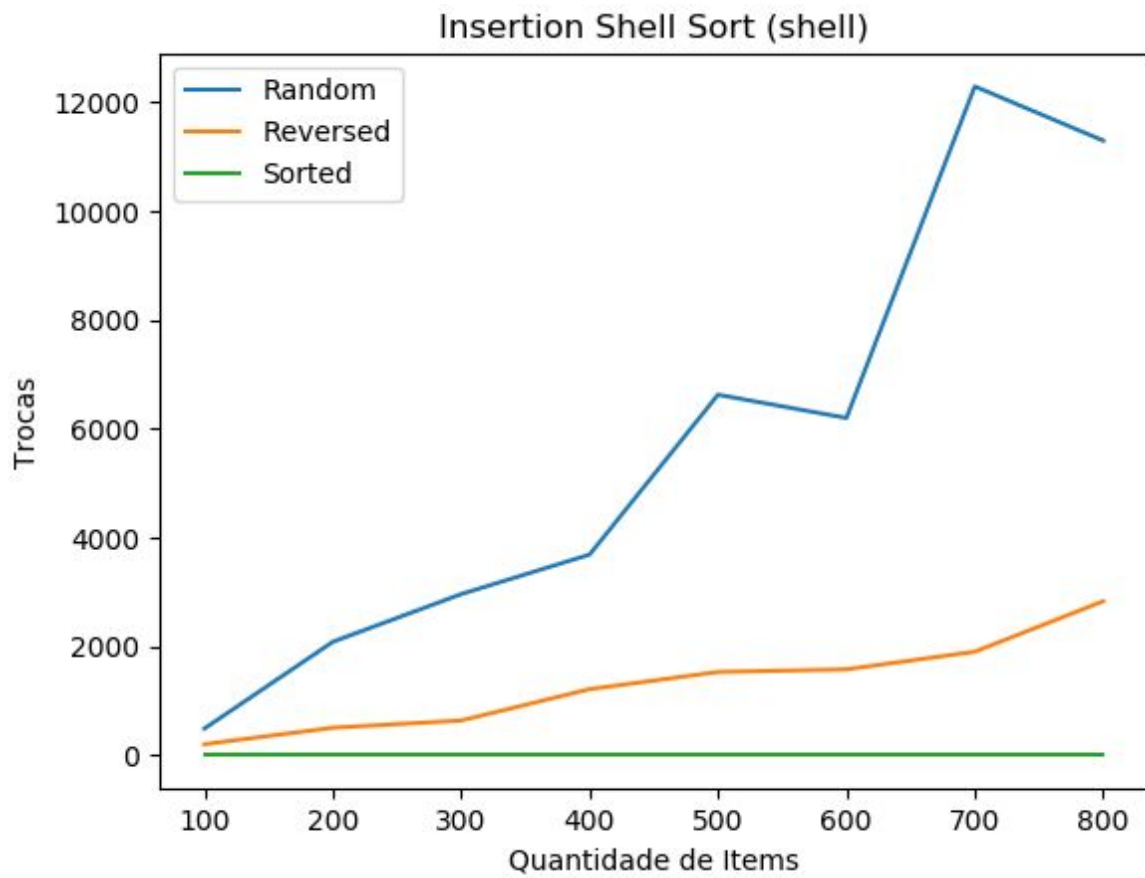


Insertion Shell Sort (shell)

Tempo:

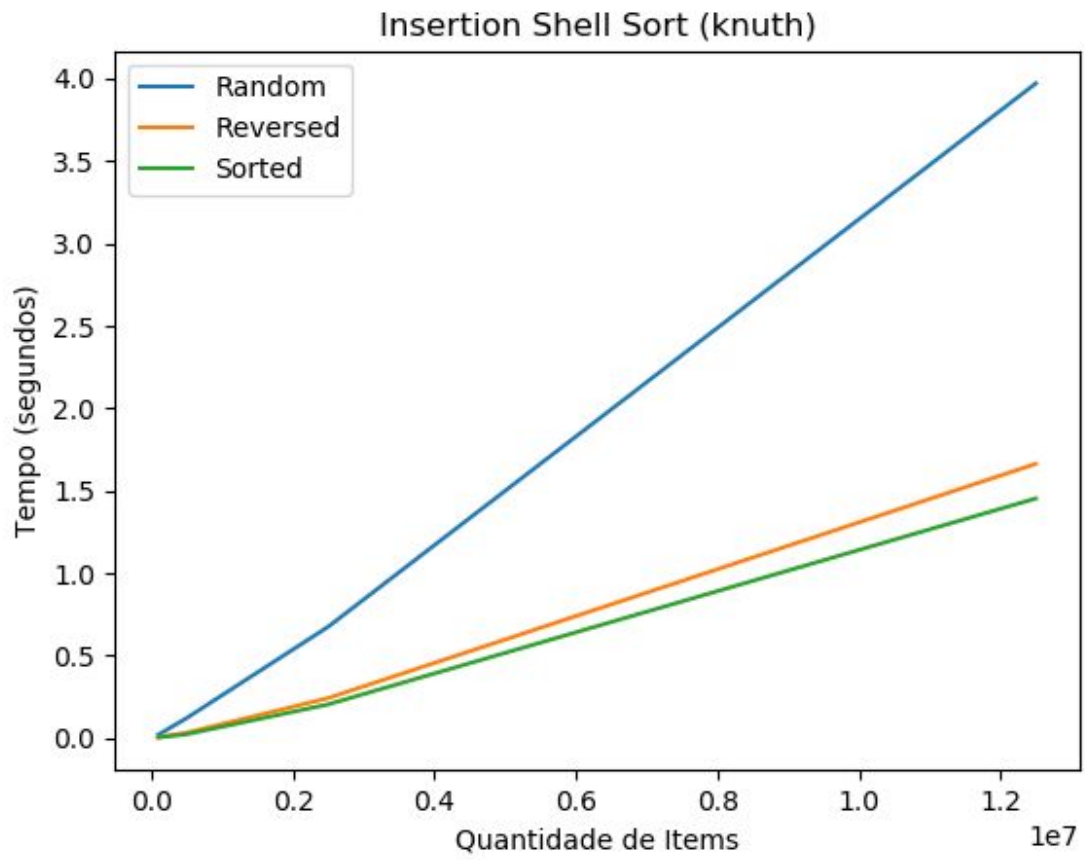


Trocas:



Insertion Shell Sort (knuth)

Tempo:

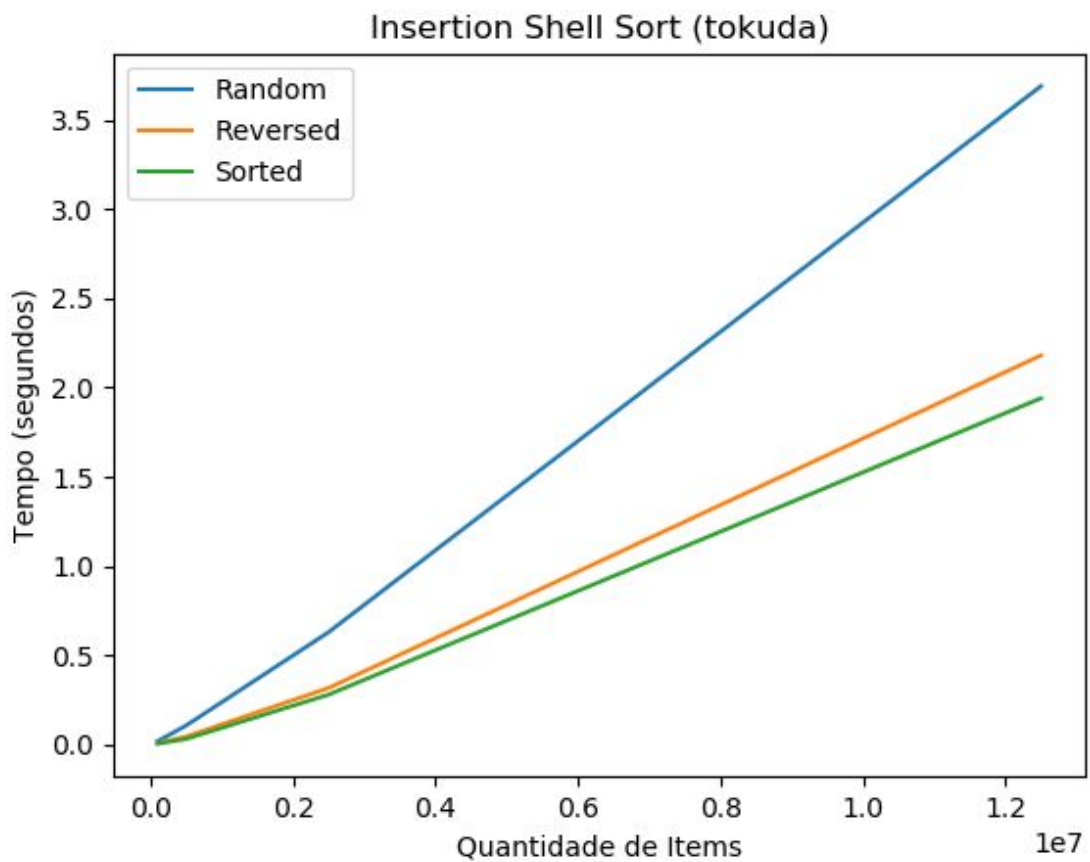


Trocas:



Insertion Shell Sort (tokuda)

Tempo:



Trocas:

