Algorytmy

Algorytmy

Pojęcia

- Increasing order (>): 1,3,4,6,8,9
- Decreasing order (<): 9,8,6,4,3,1
- Non-Increasing order (<=): 9,8,6,3,3,1
- Non-Decreasing order (>=): 1,3,3,6,8,9

Algorytmy

Sortowania

- Bubble Sort
- Insertion Sort
- Selection Sort
- Merge Sort
- Quick Sort

Algorytmy

Bubble Sort – $O(n^2)$

10	29	23	31	6

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

10	23	29	31	6

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Algorytmy

Bubble Sort – $O(n^2)$

Po iteracji 1

Algorytmy

Bubble Sort – $O(n^2)$

Po iteracji 2

Algorytmy

Bubble Sort – $O(n^2)$

Po iteracji 3

Algorytmy

Bubble Sort – $O(n^2)$

Po iteracji 4

Algorytmy

Bubble Sort – $O(n^2)$

Po iteracji 5

Algorytmy

Bubble Sort – $O(n^2)$

Implementacja Bubble Sort.

Algorytmy

Sortowanie przez wstawianie

Implementacja

Jaka jest złożoność?

Algorytmy

Sortowanie przez zliczanie

Implementacja

Jaka jest złożoność?

Algorytmy

Insertion Sort – $O(n^2)$

10	29	23	6	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

10	29	23	6	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

10	29	23	6	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

10	29	23	6	31	15	38	40

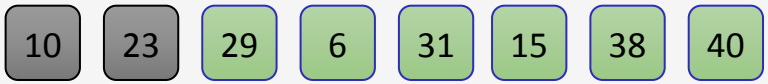
Algorytmy

Insertion Sort – $O(n^2)$

10	29	23	6	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$



Algorytmy

Insertion Sort – $O(n^2)$

Algorytmy

Insertion Sort – $O(n^2)$

10	23	29	6	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

10	23	6	29	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

10	23	6	29	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$

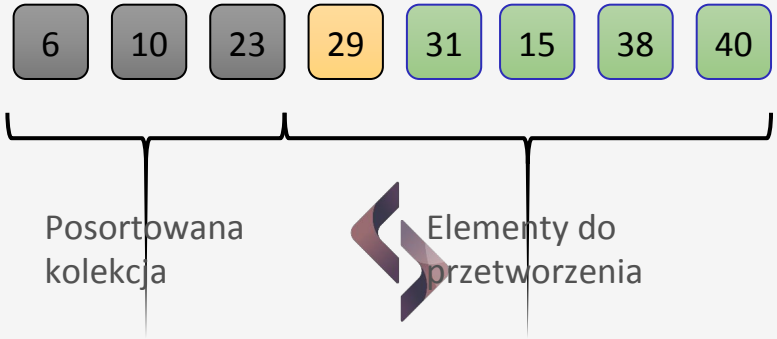
Algorytmy

Insertion Sort – $O(n^2)$

10	6	23	29	31	15	38	40

Algorytmy

Insertion Sort – $O(n^2)$



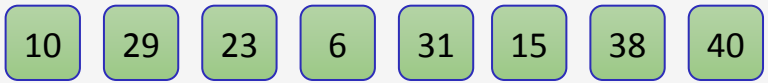
Algorytmy

Insertion Sort – $O(n^2)$

Implementacja Insertion Sort.

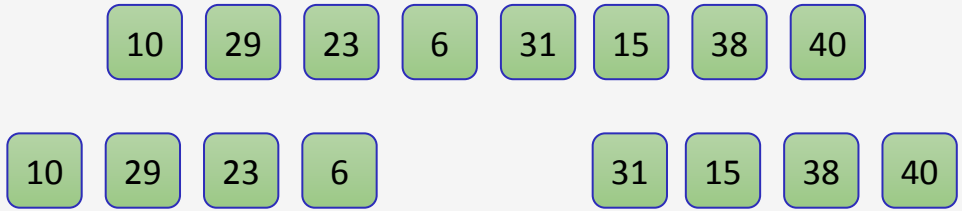
Algorytmy

Merge Sort – $O(n\log n)$



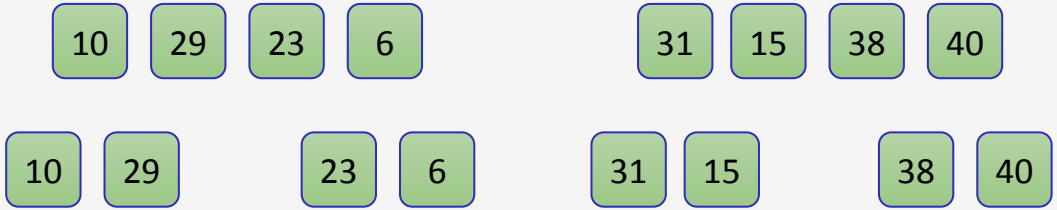
Algorytmy

Merge Sort – $O(n \log n)$



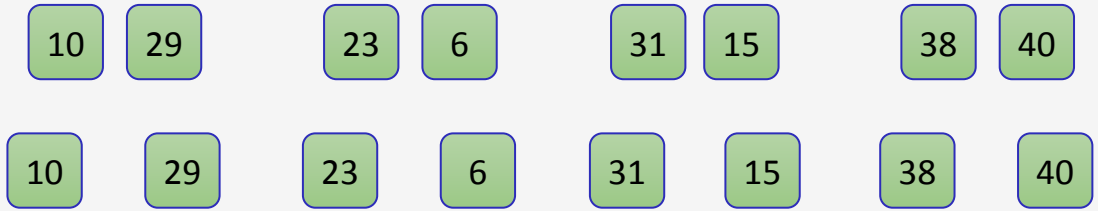
Algorytmy

Merge Sort – $O(n \log n)$



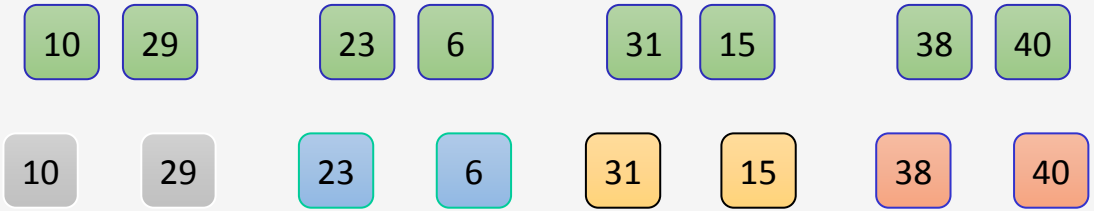
Algorytmy

Merge Sort – $O(n \log n)$



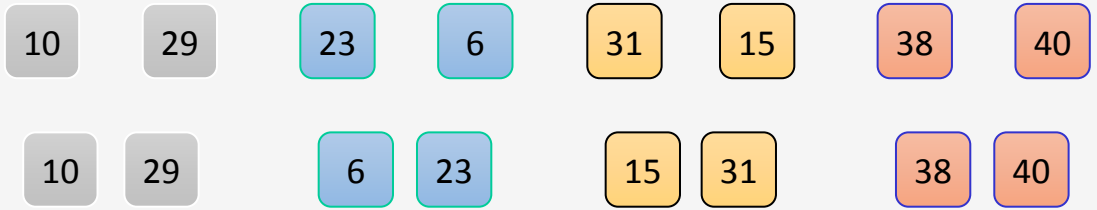
Algorytmy

Merge Sort – $O(n \log n)$



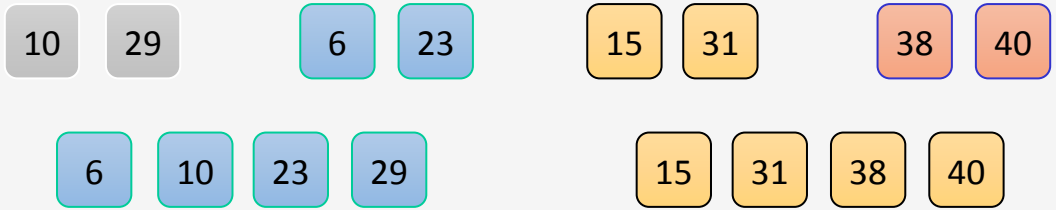
Algorytmy

Merge Sort – $O(n \log n)$



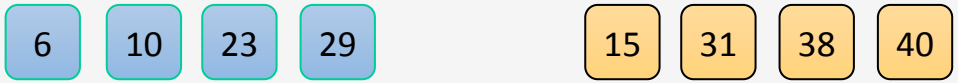
Algorytmy

Merge Sort – $O(n \log n)$



Algorytmy

Merge Sort – $O(n \log n)$



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Algorytmy

Merge Sort – $O(n\log n)$

Implementacja Merge Sort.

Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

10	29	23	6	31	15	38	40	31	27

Algorytmy

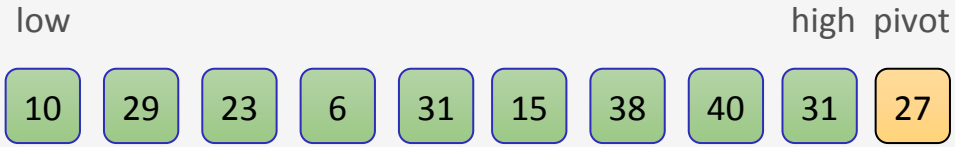
Quick Sort – $O(n\log n)$ / $O(n^2)$

pivot

10	29	23	6	31	15	38	40	31	27

Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

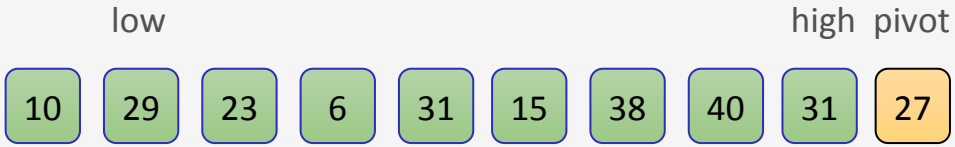
low high pivot

10	29	23	6	31	15	38	40	31	27

<pivot

Algorytmy

Quick Sort – $O(\mathrm{nlog}\,n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

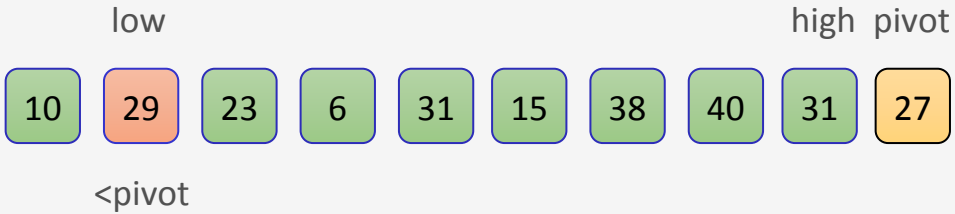
low high pivot

10	29	23	6	31	15	38	40	31	27

<pivot

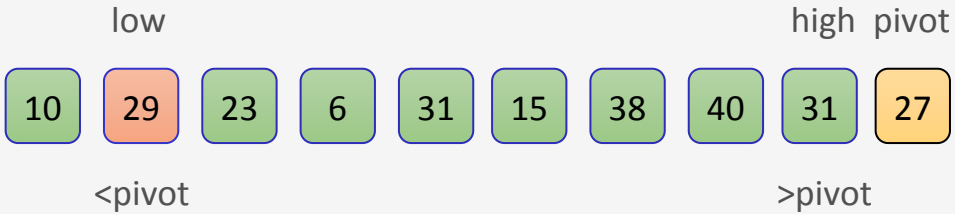
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



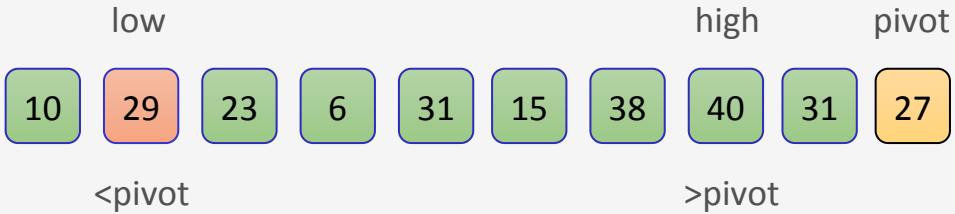
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



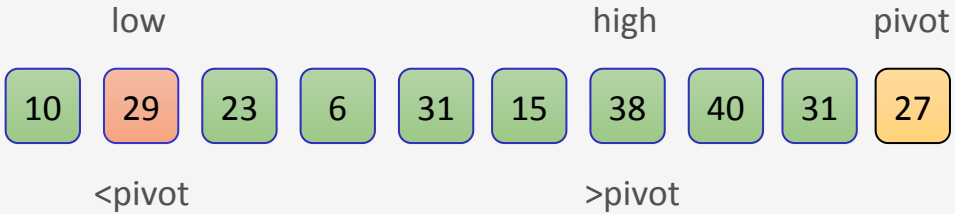
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

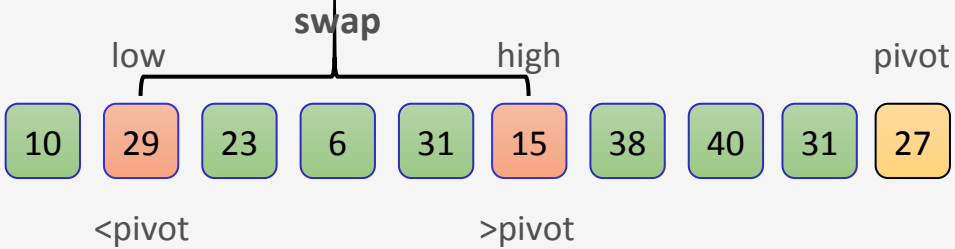
low high pivot

10	29	23	6	31	15	38	40	31	27

<pivot >pivot

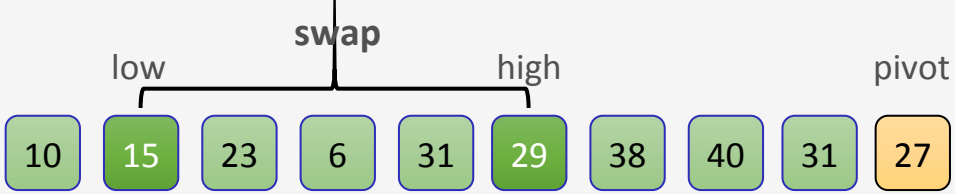
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



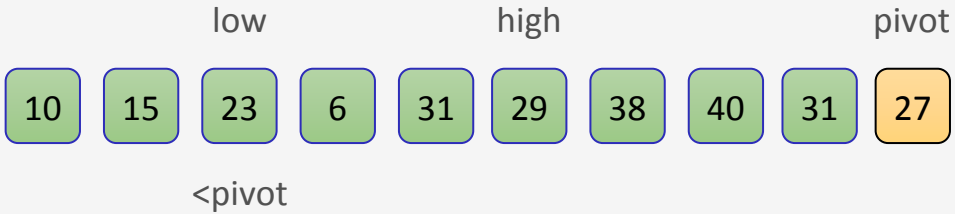
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



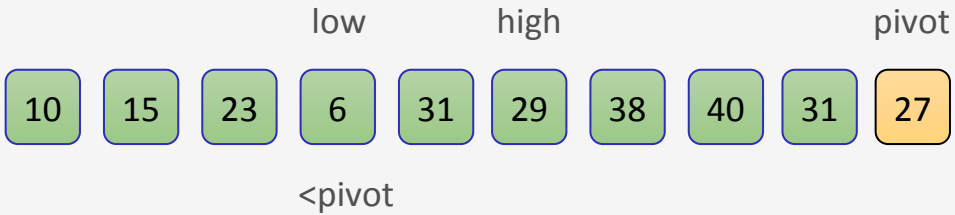
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



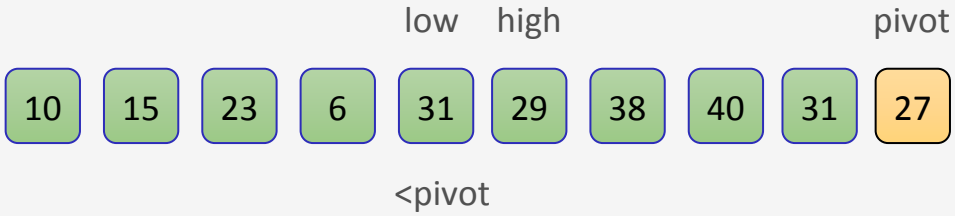
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



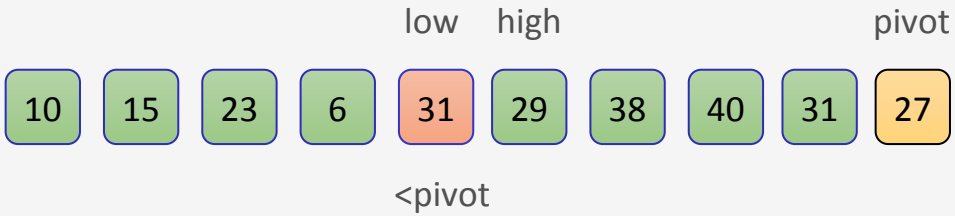
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

high

low pivot

10	15	23	6	31	29	38	40	31	27

<pivot

Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

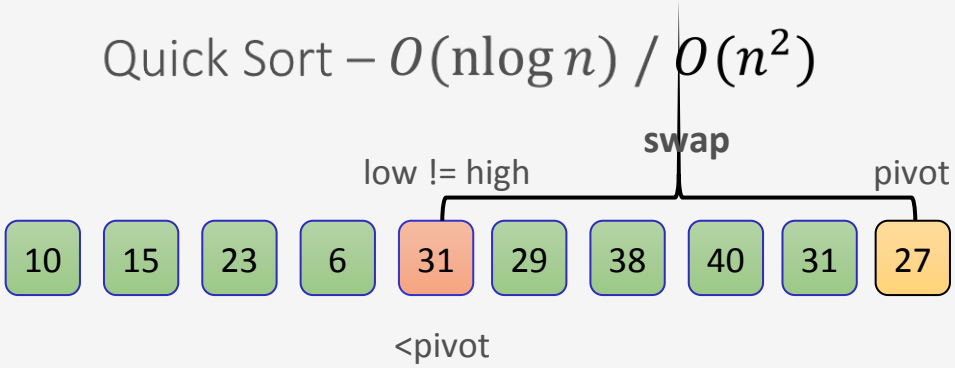
low != high pivot

10	15	23	6	31	29	38	40	31	27

<pivot

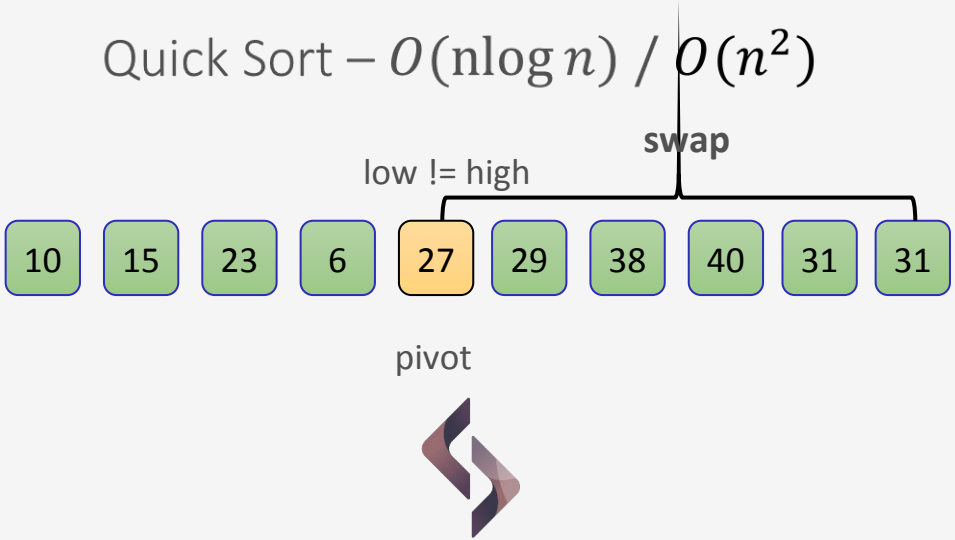
Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$



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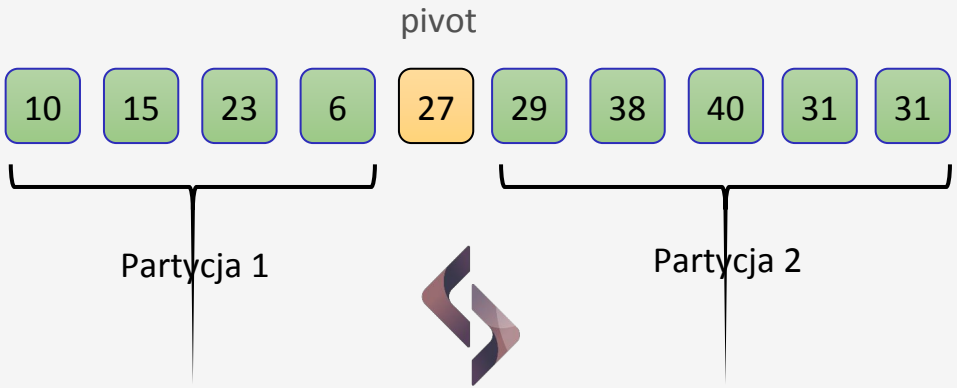
Quick Sort – $O(n\log n)$ / $O(n^2)$



Algorytmy

Quick Sort – $O(n\log n)$ / $O(n^2)$

Implementacja Quick Sort.