CE205 Data Structures Week-9

Sorting Algorithms, Taxonomy and Comparisons

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# CE205 Data Structures

# Week-9

### Sorting Algorithms, Taxonomy and Comparisons

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### Outline

* Resources
* Sortings

### Outline

* Insertion Sort
* Selection Sort
* Radix Sort
* Quick Sort
* Heap Sort
* Permutation Sort
* Gnome Sort
* Comb Sort

### Outline

* Flash Sort
* Stooge Sort
* Bees Algorithm
* Lucky Sort
* Indirect Sort (Pointer Sort)
* External Sort (Segmented Sort)
* Shaker Sort / Bidirectional Bubble Sort
* Shell Sort
* Comparison of Sorting Methods

### Resources

* https://www.cs.usfca.edu/~galles/visualization/Algorithms.html
* https://www.geeksforgeeks.org/sorting-algorithms/
* https://sorting.at/
* https://xlinux.nist.gov/dads/HTML/sort.html
* https://xlinux.nist.gov/dads/

### Insertion Sort

* https://www.programiz.com/dsa/insertion-sort
* https://visualgo.net/en/sorting (select INS)
* http://www.btechsmartclass.com/data\_structures/insertion-sort.html
* https://rosettacode.org/wiki/Sorting\_algorithms/Insertion\_sort
* https://xlinux.nist.gov/dads/HTML/insertionSort.html

### Selection Sort

* https://www.programiz.com/dsa/selection-sort
* https://visualgo.net/en/sorting (select SEL)
* http://www.btechsmartclass.com/data\_structures/selection-sort.html
* https://www.geeksforgeeks.org/selection-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Selection\_sort
* https://xlinux.nist.gov/dads/HTML/selectionSort.html

### Radix Sort

* https://www.programiz.com/dsa/radix-sort
* https://visualgo.net/en/sorting (select RAD)
* http://www.btechsmartclass.com/data\_structures/radix-sort.html
* https://www.geeksforgeeks.org/radix-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Radix\_sort
* https://xlinux.nist.gov/dads/HTML/radixsort.html

### Quick Sort

* https://www.programiz.com/dsa/quick-sort
* https://visualgo.net/en/sorting (select QUI)
* http://www.btechsmartclass.com/data\_structures/quick-sort.html
* https://www.geeksforgeeks.org/quick-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Quicksort
* https://xlinux.nist.gov/dads/HTML/quicksort.html
* https://xlinux.nist.gov/dads/HTML/multikeyQuicksort.html

### Heap Sort

* https://www.programiz.com/dsa/heap-sort
* http://www.btechsmartclass.com/data\_structures/heap-sort.html
* https://visualgo.net/en/heap
* https://www.geeksforgeeks.org/heap-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Heapsort
* https://xlinux.nist.gov/dads/HTML/heapSort.html

### Permutation Sort

* https://www.geeksforgeeks.org/bogosort-permutation-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Permutation\_sort

### Gnome Sort

* https://www.geeksforgeeks.org/gnome-sort-a-stupid-one/?ref=lbp
* https://rosettacode.org/wiki/Sorting\_algorithms/Gnome\_sort

### Comb Sort

* https://www.geeksforgeeks.org/comb-sort/
* https://rosettacode.org/wiki/Sorting\_algorithms/Comb\_sort

### Flash Sort

* https://en.wikipedia.org/wiki/Flashsort
* https://www.drdobbs.com/database/the-flashsort1-algorithm/184410496

### Stooge Sort

* https://xlinux.nist.gov/dads/HTML/stoogesort.html
* https://en.wikipedia.org/wiki/Stooge\_sort
* https://courses.cs.washington.edu/courses/cse373/13wi/lectures/02-22/18-sorting1-bogo-stooge-bubble.pdf

### Bees Algorithm

* https://en.wikipedia.org/wiki/Bees\_algorithm
* http://beesalgorithmsite.altervista.org/Downloads.htm

### Lucky Sort

* https://xlinux.nist.gov/dads/HTML/luckySort.html

### Indirect Sort (Pointer Sort)

* https://xlinux.nist.gov/dads/HTML/internalsort.html

### External Sort (Segmented Sort)

* https://xlinux.nist.gov/dads/HTML/externalsort.html
* https://xlinux.nist.gov/dads/HTML/externalMemoryAlgo.html

### Shaker Sort / Bidirectional Bubble Sort

* https://xlinux.nist.gov/dads/HTML/bidirectionalBubbleSort.html

### Shell Sort

* https://www.programiz.com/dsa/shell-sort
* https://rosettacode.org/wiki/Sorting\_algorithms/Shell\_sort

### Comparison of Sorting Methods

* http://www.btechsmartclass.com/data\_structures/comparison-of-sorting-methods.html