

CE205 Data Structures Week-9

Sorting Algorithms, Taxonomy and Comparisons

Author: Asst. Prof. Dr. Uğur CORUH

Contents

1	CE205 Data Structures	1
2	Week-9	1
2.0.1	Sorting Algorithms, Taxonomy and Comparisons	1
2.0.2	Outline	2
2.0.3	Outline	2
2.0.4	Outline	2
2.0.5	Resources	2
2.0.6	Insertion Sort	2
2.0.7	Selection Sort	2
2.0.8	Radix Sort	3
2.0.9	Quick Sort	3
2.0.10	Heap Sort	3
2.0.11	Permutation Sort	3
2.0.12	Gnome Sort	3
2.0.13	Comb Sort	3
2.0.14	Flash Sort	4
2.0.15	Stooge Sort	4
2.0.16	Bees Algorithm	4
2.0.17	Lucky Sort	4
2.0.18	Indirect Sort (Pointer Sort)	4
2.0.19	External Sort (Segmented Sort)	4
2.0.20	Shaker Sort / Bidirectional Bubble Sort	4
2.0.21	Shell Sort	4
2.0.22	Comparison of Sorting Methods	4

List of Figures

List of Tables

1 CE205 Data Structures

2 Week-9

2.0.1 Sorting Algorithms, Taxonomy and Comparisons

Download DOC¹, SLIDE², PPTX³

¹ce205-week-9-sorting.md_doc.pdf

²ce205-week-9-sorting.md_slide.pdf

³ce205-week-9-sorting.md_slide.pptx

2.0.2 Outline

- Resources
 - Sortings
-

2.0.3 Outline

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

2.0.4 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
-

2.0.5 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/>
-

2.0.6 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>
-

2.0.7 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>
-

2.0.8 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>
-

2.0.9 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>
-

2.0.10 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>
-

2.0.11 Permutation Sort

- <https://www.geeksforgeeks.org/bogosort-permutation-sort/>
 - https://rosettacode.org/wiki/Sorting_algorithms/Permutation_sort
-

2.0.12 Gnome Sort

- <https://www.geeksforgeeks.org/gnome-sort-a-stupid-one/?ref=lbp>
 - https://rosettacode.org/wiki/Sorting_algorithms/Gnome_sort
-

2.0.13 Comb Sort

- <https://www.geeksforgeeks.org/comb-sort/>
 - https://rosettacode.org/wiki/Sorting_algorithms/Comb_sort
-

2.0.14 Flash Sort

- <https://en.wikipedia.org/wiki/Flashsort>
 - <https://www.drdoobbs.com/database/the-flashsort1-algorithm/184410496>
-

2.0.15 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>
-

2.0.16 Bees Algorithm

- https://en.wikipedia.org/wiki/Bees_algorithm
 - <http://beesalgorithmwebsite.altervista.org/Downloads.htm>
-

2.0.17 Lucky Sort

- <https://xlinux.nist.gov/dads/HTML/luckySort.html>
-

2.0.18 Indirect Sort (Pointer Sort)

- <https://xlinux.nist.gov/dads/HTML/internalsort.html>
-

2.0.19 External Sort (Segmented Sort)

- <https://xlinux.nist.gov/dads/HTML/externalsort.html>
 - <https://xlinux.nist.gov/dads/HTML/externalMemoryAlgo.html>
-

2.0.20 Shaker Sort / Bidirectional Bubble Sort

- <https://xlinux.nist.gov/dads/HTML/bidirectionalBubbleSort.html>
-

2.0.21 Shell Sort

- <https://www.programiz.com/dsa/shell-sort>
 - https://rosettacode.org/wiki/Sorting_algorithms/Shell_sort
-

2.0.22 Comparison of Sorting Methods

- http://www.btechsmartclass.com/data_structures/comparison-of-sorting-methods.html
-

End – Of – Week – 9