

Algorithms and Data Structures

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Abstract

This is my personal summary of the Computer Science course “Algorithms & Data structures/Informatik II” taught at the University of Zurich.

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1 Basic sorting algorithms

1.1 Bubble sort

1.2 Selection sort

1.3 Insertion sort

2 Recursion

3 Analysis of algorithms

3.1 Asymptotic complexity

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4 Recursion

4.1 basics recursion

4.2 Divide and conquer — Merge sort

4.3 Recurrences

4.3.1 Master method

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5 Log n sorting algorithms

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6 Data structures

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6.3 Abstract data types

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7 Graphs

7.1 Binary tree

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7.3 Red black tree

7.4 Depth first search

7.5 Breadth first search

8 Hash

8.1 Hash table

8.2 Hash function