1. Binary Search Trees

* Searching with arrays or Lists
* Search keys
* Binary search trees
* Building binary search trees
* Searching a binary search tree
* Time complexity of insertion and search
* Deleting nodes from a binary search tree
* Checking whether a binary tree is a binary search tree
* Sorting using binary search trees
* Balancing binary search trees
* Self-balancing AVL trees
* B-trees

1. Priority Queues and Heap Trees

* Trees stored in arrays
* Priority queues and binary heap trees
* Basic operations on binary heap trees
* Inserting a new heap tree node
* Deleting a heap tree node
* Building a new heap tree from scratch
* Merging binary heap trees
* Binomial heaps
* Fibonacci heaps
* Comparison of heap time complexities

1. Sorting

* The problem of sorting
* Common sorting strategies
* How many comparisons must it take?
* Bubble Sort
* Insertion Sort
* Selection Sort
* Comparison of O(n 2 ) sorting algorithms
* Sorting algorithm stability
* Treesort
* Heapsort
* Divide and conquer algorithms
* Quicksort
* Mergesort
* Summary of comparison-based sorting algorithms Non-comparison-based sorts Bin, Bucket, Radix Sorts