

Algorithms

Lab 05 (8%)

Topics: characteristics of running time, asymptotic notation, search and sorting algorithms.

Reading: Thomas H. Cormen “Algorithms Unlocked”, Chapters 1-4.

For following algorithms you have to create their C++ implementations for `vector<int>` container.

1. Binary Search – 1%
2. Insertion Search - 1%
3. Merge Sort – 2%
4. Quick Sort – 2%
5. Counting Sort – 2%

Your implementation has to follow descriptions of these algorithms in the book. You have to create 3 files:

`algol.h`, `algol.cpp`: simple library of your algorithms

`testAlgol.cpp`: unit-tests of your library (with `catch.hpp`)

You have to be able to give informal analysis of each algorithm and characteristics of its running time for different cases.