

Running Time of Sort Algorithms

Abstract:

The goal of this work is to execute sorting algorithms and observe their running time or time complexity on a specific computer. This measurement reflects how the performance of the algorithms scales with the size of the input data. In this study, three sorting algorithms (Selection Sort, Insertion Sort, and Merge Sort) are implemented with varying input sizes (10, 100, 1000, 10000)

Computer specifications:

Processor : Intel(R) Celeron(R) CPU 4205U @ 1.80GHz

RAM : 4.00 GB

Disk : HHD

Selection sort :

- **Running Time:**

Input size	10^1	10^2	10^3
Time(seconds)	9.60	382.62	41381.96

Insertion Sort :

- **Running Time:**

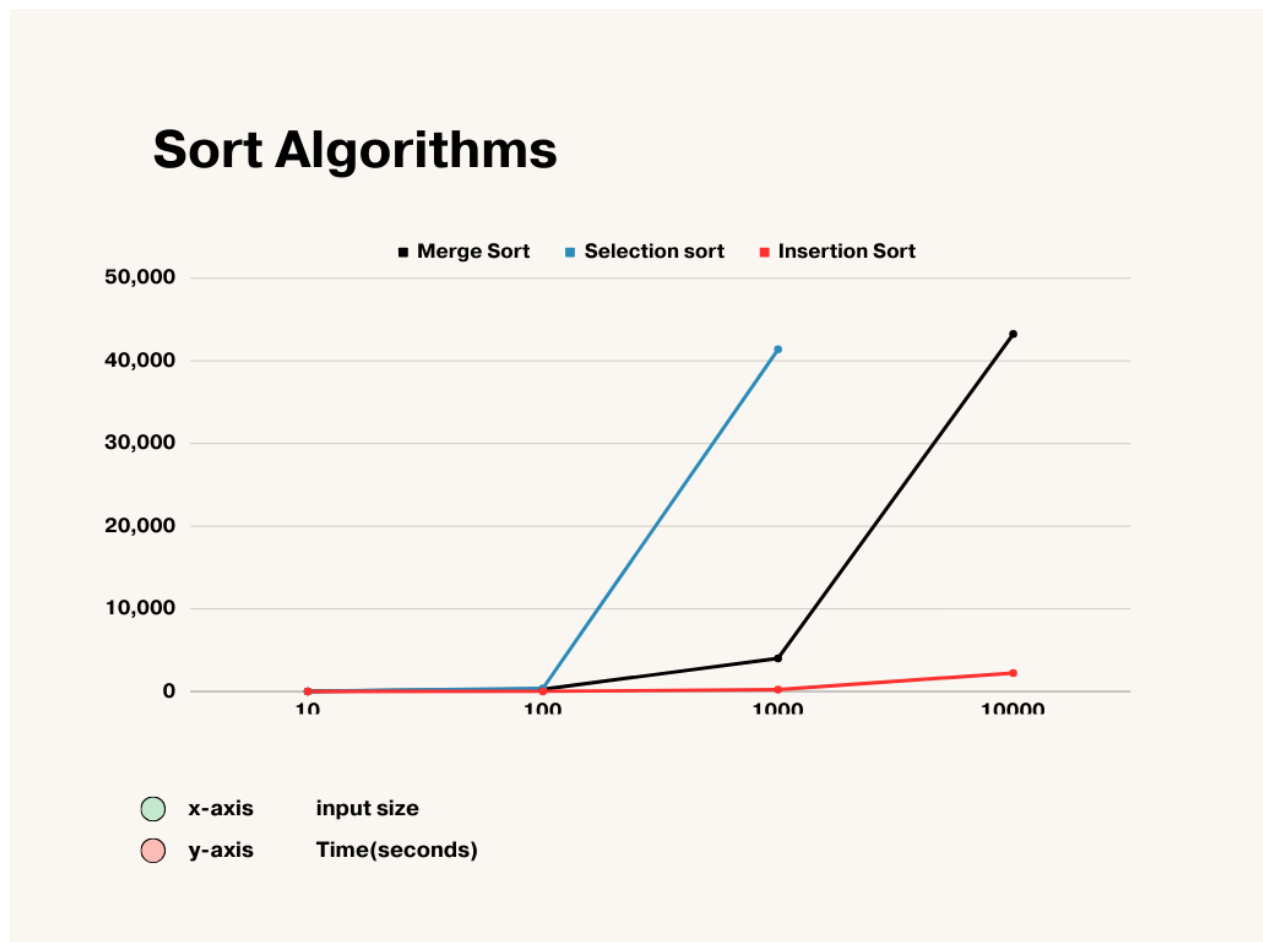
Input size	10^1	10^2	10^3	10^4
Time(seconds)	2.17	20.28	217.60	2234.74

Merge Sort:

- **Running Time:**

Input size	10^1	10^2	10^3	10^4
Time(seconds)	17.52	261.8	4018.08	43236.21

Plot :



Source code:

