Search Algorithm Benchmark Report

This report evaluates the performance of different search algorithms on text data with varying sizes. Each algorithm is tested against a target string placed at the end of the list to simulate a worst-case search.

Algorithms Tested

- Naive Search (Linear)

- Set Search

- Dictionary Search

- Index Map Search

- Binary Search

- Trie Search

Performance Results

- File Size: 50000 rows

Algorithm	Time (μs)
set	3.19
dict	3.41
trie	7.43
binary	179.69
naive	1541.94
index_map	2290.10

- File Size: 100000 rows

Algorithm	Time (μs)
set	3.56

Algorithm	Time (µs)
dict	4.93
trie	8.11
binary	15.57
index_map	2469.48
naive	3133.17

- File Size: 150000 rows

Algorithm	Time (µs)
set	3.57
dict	3.71
binary	14.93
trie	22.02
naive	4003.42
index_map	5124.81

- File Size: 200000 rows

Algorithm	Time (µs)
set	3.27
trie	6.29
dict	8.81
binary	19.30
naive	4903.49
index_map	5416.64

- File Size: 250000 rows

Algorithm	Time (µs)
dict	4.08

set	4.49
trie	7.14
binary	18.78
index_map	6809.22
naive	6980.97

Performance Comparison Chart

Search Algorithm Performance