

# Report

## Author

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## Basic Info

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- XPS15 i7 8 Gen
- All time in sec
- Mode
  - random string
  - String Length: 2
- Test Script (Basic)
  - 5th test string numbers are based on different order notations

```
STRUCTURES=(vector list bst hash_table priority_queue)
OPERATIONS=(sort remove_dups_same_order remove_dups_any_order mode)
LENGTHS=(10000 20000 100000 500000)
LENGTH=2
EXEC=./cmake-build-debug/13th
OUTFILE=out.txt

for S in ${STRUCTURES[@]}; do
  for O in ${OPERATIONS[@]}; do
    for L in ${LENGTHS[@]}; do
      ${EXEC} ${S} ${O} random ${L} ${LENGTH} ${OUTFILE}
    done
  done
done
```

## Tests

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Vector

#

Sort

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.015625	0.0625
20000	0	0	0.125
100000	0.015625	0.046875	0.5
500000	0.046875	0.21875	2.75
1000000	0.09375	0.5	5.51562

### Remove\_dups\_same\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.046875	0.015625
20000	0	0.09375	0.015625
100000	0.015625	0.515625	0
500000	0.046875	2.67188	0
1000000	0.09375	5.21875	0.015625

### Remove\_dups\_any\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0.015625
20000	0	0	0.015625
100000	0.015625	0.046875	0
500000	0.046875	0.234375	0.015625
5000000	1.28125	6.92188	0.09375

### Mode

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0
20000	0	0.015625	0
100000	0	0.046875	0
500000	0.046875	0.234375	0
4000000	1	5.35938	0.09375

List

#

Sort

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0.0625
20000	0	0.03125	0.125
100000	0	0.125	0.609375
500000	0.046875	0.671875	2.5
1000000	0.09375	1.59375	5.125

Remove\_dups\_same\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0.015625	0.09375	0.015625
20000	0.015625	0.203125	0.015625
100000	0	1.10938	0.015625
500000	0.046875	5.76562	0.046875
1000000	0.09375	11.9531	0.171875

Remove\_dups\_any\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0.015625	0	0
20000	0.015625	0.015625	0
100000	0.015625	0.09375	0.015625
500000	0.0625	0.671875	0.078125
3000000	0.453125	4.39062	0.4375

## Mode

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.015625	0
20000	0	0.03125	0
100000	0.10.125	0.05	
500000	0.046875	0.8125	0.078125
1000000	0.109375	6.901625	0.609371

## BST

#

## Sort

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0.0625
20000	0	0	0.109375
100000	0.015625	0.03125	0.515625
500000	0.046875	0.1875	2.78125
1000000	0.125	0.40625	5.07812

## Remove\_dups\_same\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0.015625
20000	0.015625	0	0
100000	0.015625	0.03125	0
500000	0.0625	0.1875	0
20000000	0.6109375	7.403593	0.2187015

## Remove\_dups\_any\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0
20000	0	0.015625	0
100000	0	0.046875	0
500000	0.046875	0.1875	0
2000000	1.85938	7.29688	0.2031

## Mode

# of Strings	Load Time	Operation Time	Output Time
10000	0.015625	0	0
20000	0	0	0
100000	0.015625	0.03125	0
500000	0.046875	0.75	0.078125
3000000	0.296875	5.25	0.5

## HashTable

#

## Sort

N/A

## Remove\_dups\_same\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0
20000	0	0.015625	0
100000	0	0.03125	0.015625
500000	0.046875	0.15625	0.015625
15000000	1.375	4.17188	0.171875

## Remove\_dups\_any\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0
20000	0.015625	0	0.015625
100000	0.015625	0.03125	0
500000	0.046875	0.15625	0.015625
15000000	1.45312	4.34375	0.15625

## Mode

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.015625	0
20000	0	0.015625	0
100000	0	0.03125	0
500000	0.046875	0.140625	0
20000000	2.0625	6.03125	0.21875

## Priority Queue

#

## Sort

# of Strings	Load Time	Operation Time	Output Time
10000	0	0	0.0625
20000	0	0.015625	0.125
100000	0	0.109375	0.53125
500000	0.046875	0.640625	2.67188
1000000	0.09375	1.32812	5.125

### Remove\_dups\_same\_order

N/A

### Remove\_dups\_any\_order

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.015625	0
20000	0	0.015625	0
100000	0.015625	0.109375	0
500000	0.046875	0.640625	0.015625
3000000	0.328125	4.95312	0.046875

### Mode

# of Strings	Load Time	Operation Time	Output Time
10000	0	0.015625	0
20000	0.015625	0.015625	0
100000	0.015625	0.109375	0
500000	0.046875	0.640625	0
3000000	0.296875	4.65625	0.03625