

Part 1

| | | | | |
|-----------|-----------|------------|------------------------|------------------------|
| words.txt | story.txt | ArrayList | 0 mins 00.0059775 secs | 0 mins 00.0006125 secs |
| words.txt | story.txt | LinkedList | 0 mins 00.0007160 secs | 0 mins 00.0008084 secs |
| words.txt | story.txt | SortedList | 0 mins 00.0008240 secs | 0 mins 00.0001991 secs |
| story.txt | words.txt | ArrayList | 0 mins 00.0006084 secs | 0 mins 00.0000226 secs |
| story.txt | words.txt | LinkedList | 0 mins 00.0004430 secs | 0 mins 00.0000887 secs |
| story.txt | words.txt | SortedList | 0 mins 00.0019743 secs | 0 mins 00.0000402 secs |

Part 2

Fastest

Check words array

Check words sorted

Check words linked

Check bible sorted

Check bible array

Check bible linked

Add words arrayList

Add words linked

Add words sorted

middle

Add bible arrayList

Add bible linked list

Slowest

Add bible sorted

Why

Each of the checks takes up very little time as a for each loop is used, which can limit the amount of actual search time. The creation in of all of the words sets was also marked as fast because of the size of the list compared to the size of the bible. In the middle is the two bible adds that would only take $O(n)$ so long as the next add location is tracked in the linked list, because they only need to be added, and not then resorted. Add bible sorted is predicted to be the slowest because of the amount of time it will take as the list gets larger to sort through and find the correct position to place the new item in.

Part 3

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|-----------|-----------|------------|------------------------|------------------------|
| words.txt | kjV10.txt | ArrayList | 0 mins 00.0061109 secs | 0 mins 00.0169623 secs |
| words.txt | kjV10.txt | LinkedList | 0 mins 00.0007542 secs | 0 mins 00.0601972 secs |
| words.txt | kjV10.txt | SortedList | 0 mins 00.0008465 secs | 0 mins 00.0948477 secs |
| kjV10.txt | words.txt | ArrayList | 0 mins 00.0531950 secs | 0 mins 00.0047606 secs |
| kjV10.txt | words.txt | LinkedList | 0 mins 00.0383454 secs | 0 mins 00.0211408 secs |
| kjV10.txt | words.txt | SortedList | 0 mins 30.1358838 secs | 0 mins 00.0052463 secs |