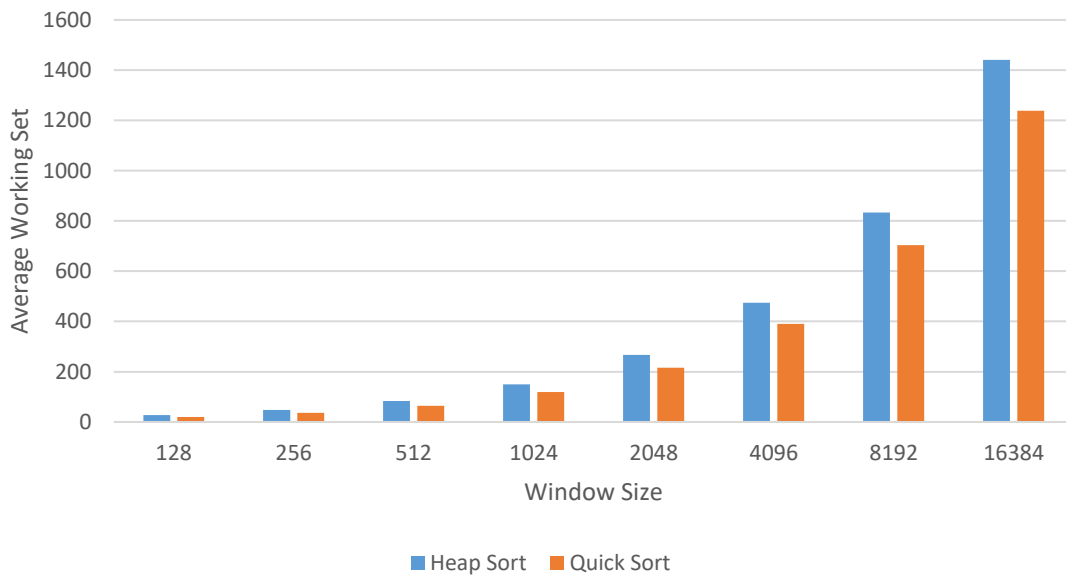Heap Sort vs. Quick Sort on 64 Word Pages

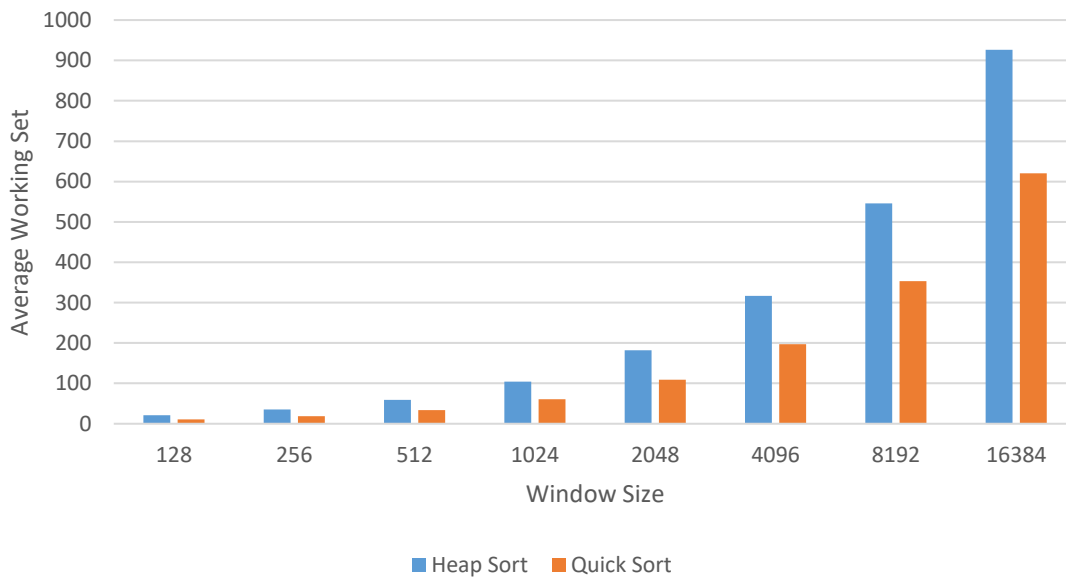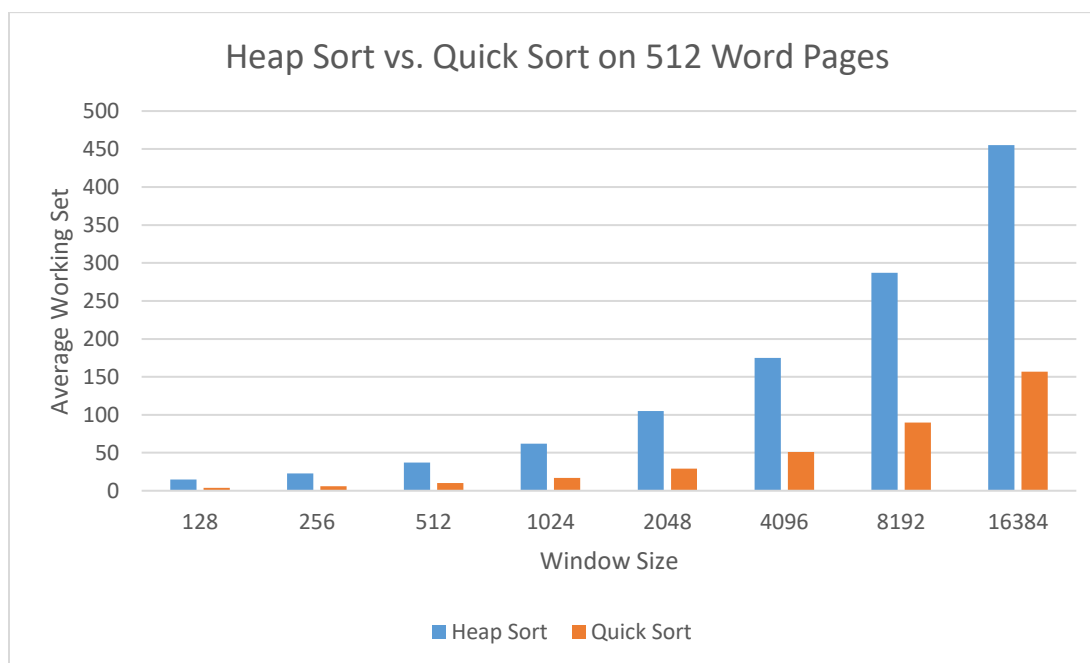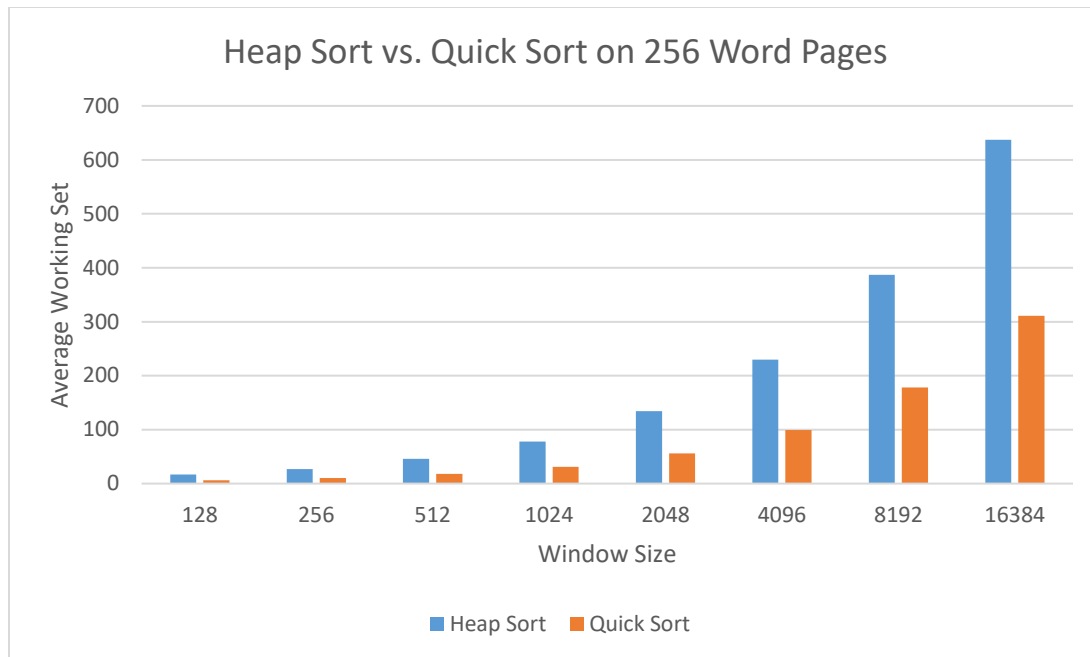Heap Sort vs. Quick Sort on 128 Word Pages

Heap Sort vs. Quick Sort on 256 Word Pages

Heap Sort vs. Quick Sort on 512 Word Pages

As you can see through the graphs, quick sort always has an average working set requirement that is proportionally smaller than that of heap sort's. In heap sort, the process scans over the entire array of numbers to be sorted similar to bubble sort. The process sorts on average around half the array every window size interval. In quick sort, the process is scanning over partition(s) of the array that are close together. The process may initially scan over the entire array; however as partitions grow smaller, the process only has to scan a handful of pages to sort partition(s) in succession. Therefore, it makes sense that quick sort on average needs less pages in the working set requirement than heap sort.