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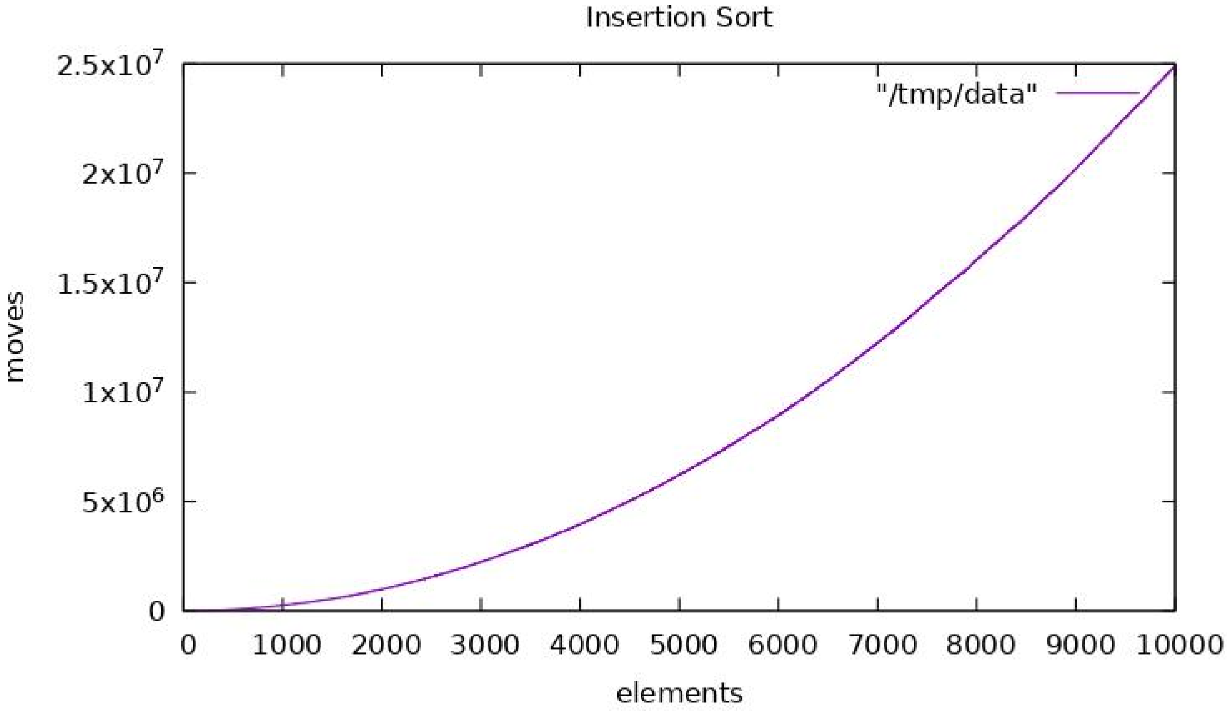
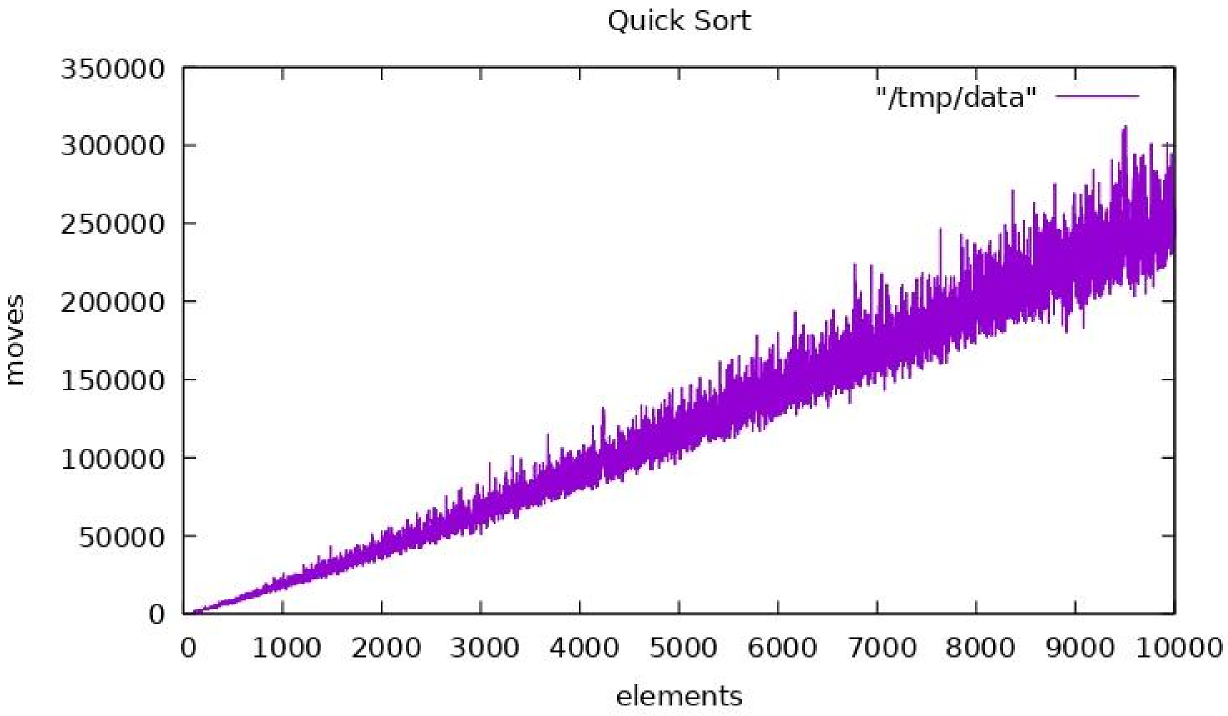
Assignment 3: Sorting
Getting your affairs in order

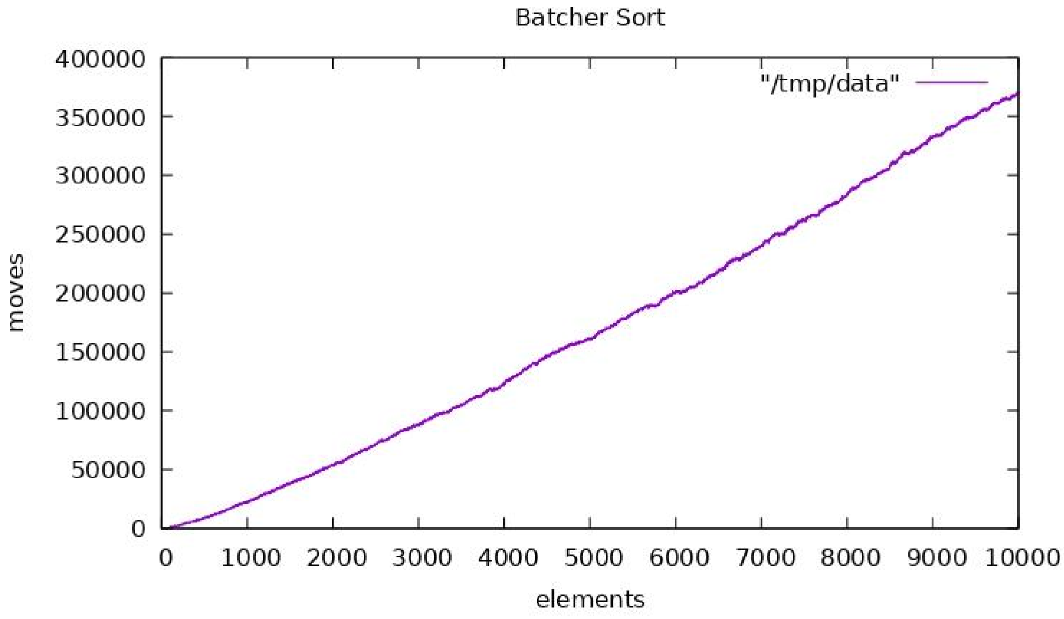
Each sorting algorithm used had its own difficulty implementing, with different levels of complexity. If I were to pick which one to use it would be Insertion sort, it makes the most sense and has very little room for error, it's an algorithm that I could have coded if explained to me while the others I feel would be too difficult. The only draw back is it extremely slow and should only be used for very small amounts of data. The amount of moves dramatically increase as the amount of elements increases way more than all the other sorting algorithms combined.



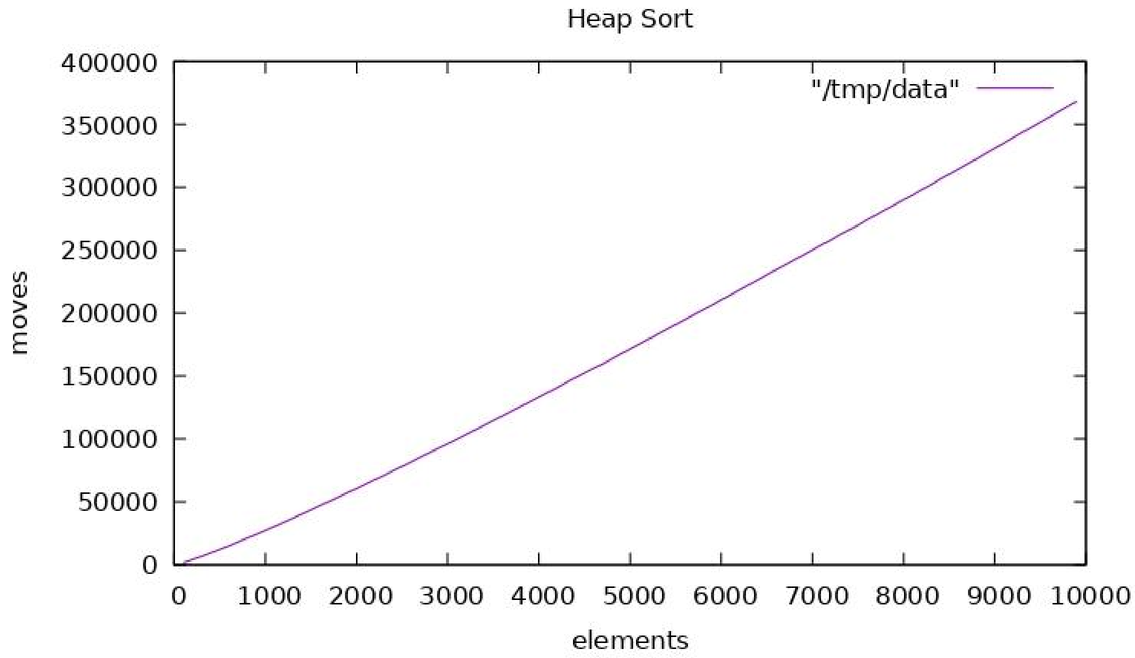
Quicksort also has the advantage of being faster, on average, than all the other sorting methods tested in lab 3. With its speed and simplicity, it will be the sorting algorithm I go to when needing to sort large amounts of data in a timely manner. Its use of recursive algorithms makes it prone to infinite recursion, which did happen many times while implementing. Another cool thing about quick sort is how much it varies, compared to all the other algorithms that are strictly one O(nlogn) while quick sort can be O(n^2).



Batcher sort, or merge sort, is the one that most confused me when trying to wrap my head around. The use of splitting the array into odd and even parts until there are single indices still sounds like something I wouldn't be able to implement without the pseudocode. The graph is this bumpy line which when thinking about how batcher merge sort works makes sense, as arrays are split into halves and not always can perfectly split so could take more moves than another.



Heap sort not being invented by someone named John Heap makes my bones ache, nevertheless, it's has consistent sorting moves making it very reliable. The moves is very similar to Batcher sort but with more consistency.



A key thing I learned while doing this lab has to use structs and pointers. Pointers by far causing me the most trouble. Having to read, reread, and watch a copious amount of videos on how they work having it explained by different people, I still don't feel confident enough to explain it to another person.

Structs were the other new concept I was introduced to, using them in conjunction with pointers only added to their complexity in my head and really set me back.