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CS 302

This projects goal was to make a function that returns that kth smallest element in the array based on a number that the user passes in from the terminal. The array we are given, taken in as a file is random – all unsorted integers ranging from 1-99. The programs job is to, as quickly as possible find the kth smallest; or in other words, take the index + 1 from k, and return the number of what the sorted array would contain. In this case, we had the numbers 1-99, therefore we could easily check if we were right just by simply setting our k value to something in the array and if it returns the same value of your k, you have completed the task. The way I went about this was to use a count system, and see what number was on the left, and right, and swapped accordingly. using the pivot, or the first value in the array we got as the pivot value. The power of this is that, instead of having to waste CPU run time on completely sorting an entire array and then returning the number at X location, we can simply run this program, and it can do it in much less time and effort by making a couple necessary swaps.