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CS 241
Lab 6 write up

Array Size	Naive Bubble Sort	Optimized Bubble Sort	Quick Sort
10	0.0000006 seconds	0.000005 seconds	0.000022 seconds
100	0.000114 seconds	0.000080 seconds	0.000028 seconds
1,000	0.005832 seconds	0.006319 seconds	0.000327 seconds
10,000	0.553625 seconds	0.420643 seconds	0.002737 seconds
100,000	57.266668 seconds	43.342672 seconds	0.022417 seconds
1,000,000	NA	NA	0.261667 seconds
10,000,000	NA	NA	3.048744 seconds
100,000,000	NA	NA	34.574462 seconds

Question 1: The slowest sorting algorithm is the Naive Bubble Sort, because it runs through the full array twice for every single time it goes. Not cutting any steps in the algorithm makes this much slower with larger arrays.

Question 2: The fastest algorithm is the Quick Sort by FAR. This algorithm cuts down the steps in the process for sorting large arrays by a huge margin, pretty much dynamically changing the working array size as it works.

Question 3: Bubble Sort isn't bad in my opinion!! It is certainly slower when it comes to huge arrays of data. However, with smaller and medium sized arrays it gets the job done with fairly decent efficiency. I believe that this is still taught to programmers because it is really important to understand what is going on behind the scenes. With computing hardware and software getting stronger over time, it can be really easy for a computer science student to kind of brush off the importance of just how many steps it takes to perform a process.