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Creating hybrid sort algorithm

1. Firstly, I need to know **how to mix algorithms**, the decision was to **have a maximum**. Depending on that maximum, **we will call a specific sorting method**.
2. My second decision was what do we need in the algorithm, **I've decided to take time itself**. Therefore, I've looked on the time taken.
3. Of course, selection sort is out of competition (because of $O(n^2)$ in all cases), so we are now only comparing insertion, merge and quick sort.
4. **Dataset is sorted**, best algorithm will always be **insertion** (either large or small dataset)
5. **Dataset is very random**, by trying multiple times, I think **quick sort** was faster than merge
6. Therefore, I've chosen the **maximum** to be if the **dataset is almost sorted or not**
7. This can be easily done by **counting the number of sorted elements**, starting from the beginning
8. If the sorted elements are greater than or equal 75% of the elements, I will use insertion sort, else I will use quick sort
9. How to calculate the number of sorted elements? There are 2 scenarios, if the current element is smaller than the next element, increment. The other scenario is the same, but if not smaller, break the counter.
10. The second methodology is totally wrong, for example, if the first 75k elements of 100k elements is sorted, it will count 75k elements, if the element 75001 element is smaller than the element at the first index, this will generate 75000 swaps. Doesn't make sense at all to count this way.
11. Therefore. I will count the total number of sorted elements using the first scenario.

\ Duration	1000		5000		10,000		50,000		75,000		100,000		500,000	
Sorting \	S	U	S	U	S	U	S	U	S	U	S	U	S	U
Selection Sort	0.522	0.425	5.126	10.944	34.493	31.192	465.583	458.812	865.497	923.711	1697.12	1586.12	38713.3	38271
Insertion Sort	0.003	0.158	0.009	3.928	0.02	15.712	0.071	156.421	0.157	324.143	0.205	571.58	0.311	14296.3
Merge Sort	0.079	0.121	0.334	0.446	0.717	1.231	6.227	6.706	7.319	10.785	11.653	13.796	22.438	50.232
Quick Sort	0.484	0.065	11.718	0.274	40.977	0.595	497.62	3.379	1104.56	5.243	1925.94	7.052	42903	26.628
Hybrid	0.008	0.034	0.014	0.197	0.023	0.598	0.046	2.839	0.091	3.666	0.205	4.875	0.526	27.265