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Final Project Proposal

Sort Visualizer

(Sorta Helpful for Future Thinkers)

Description:

Our trio proposes a visualizer for the multiple sorting algorithms we developed this semester. You would be greeted with a selection screen that would allow you to choose which sorting algorithm you would like to see demonstrated. You will then be shown the visualization of said algorithm, with the option of slowing it down or speeding it up, along with the decision for how large the data structure you are sorting will be. The base version will include only **Bubble Sort**, **Selection Sort**, and **Insertion Sort**, which we would perfect and then expand to include the more complex algorithms with faster run times.

Included Sorts

- Base Version
    - Bubble Sort
    - Selection Sort
    - Insertion Sort
- Advanced Version
    - All Base Version Sorts
    - Merge Sort
    - Quick Sort
    - Heap Sort

Concepts Used

- **Sorting Algorithms:** Since we will be visualizing Bubble Sort, Selection Sort, Insertion Sort, Merge Sort, Quicksort, and Heapsort, we must know the implementation of each algorithm and demonstrate strong knowledge of the usage of said algorithms.
- **Different Data Structures (Array, ArrayList, Heap):** We will be using different data structures to perform the different sorting algorithms. For example, HeapSort may use heaps or heapification, while Bubble Sort might use ArrayList.

Possible Expansions

Later versions may include the addition of the following sorts:

- Shellsort
- RadixSort
- Random Sort/ BogoSort