Sorting Analysis (Project 1)

**InOrder Array Analysis:** The best method of sorting in sorted arrays is clearly the insertion sort, whereas selection sort is the worst sorting method. Number of movements for the insertion, selection, and quick sort is 0 so no movements occurred in this type of sorting. Merge and Radix are also close to the best and not that bad and heap is moderate. Radix and Insertion have the same number of comparisons too.

**ReverseOrder Array Analysis:** The best method of sorting in reversed ordered arrays is merge sorting or radix sort, whereas selection sort is the worst sorting. Selection sort, heap sort, and quick sort takes same number of movements in sorting a reversed array. For the number of comparisons insertion, selection, and quick sort have way greater number of comparisons than other sorting methods.

**AlmostOrder Array Analysis:** The best method of sorting an almost ordered array is radix sorting, although merge, quick, insertion sort methods can also be considered equally, whereas selection sort is the worst one here too. There is a huge time difference between selection sort and rest of the sorting methods as for selection there are much greater number of comparisons made than other methods of sorting.

**RandomOrder Array Analysis:** Here the best method of sorting a random array are quick sort and radix sort, whereas like any other array sorting the worst one is selection sort. There is a huge difference between selection and insertion compared to the rest of the sorting methods. Merge and heap sort methods are also near to the quick and radix sort in this type.