**15CSE211 Design and Analysis of Algorithms**

Programming Assignment I Due on 10/3/2019.

Implement Quick Sort , Merge Sort, Bubble Sort, Insertion Sort, Selection Sort, Radix Sort , Heap Sort  algorithm (as a single program-)on both random and sorted lists of sizes 1000, 5000, 10000, 50000, 75000, 100000 and 500000. Compare the performance of the above sorting methods in all the cases and write the results into a file in a tabular form.

*(NB: Upload your program and output file(comparison table ) )*

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|  | *1000* | *10000* | *100000* | *5000* | *50000* | *500000* |
| *Merge Sort* | *0.0010s* | *0.0050s* | *0.0610s* | *0.0020s* | *0.0260s* | *0.1050s* |
| *Quick Sort* | *0.0010s* | *0.0030s* | *0.0520s* | *0.0020s* | *0.0240s* | *0.1117s* |
| *Selection Sort* | *0.0030s* | *0.4250s* | *31.1230s* | *0.1020s* | *10.2790s* | *437.7507s* |
| *Insertion Sort* | *0.0010s* | *0.2370s* | *17.8590s* | *0.0530s* | *6.0400s* | *223.5326s* |
| *Bubble Sort* | *0.0070s* | *0.9270s* | *88.8050s* | *0.2390s* | *33.2090s* | *1127.8028s* |
| *Heap Sort* | *0.0010s* | *0.0070s* | *0.0810s* | *0.0040s* | *0.0700s* | *0.1587s* |
| *Radix Sort* | *0.0000s* | *0.0060s* | *0.0480s* | *0.0030s* | *0.0600s* | *0.1069s* |