Program Structures and Algorithms
Spring 2024

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GITHUB LINK:
https://github.com/kartikeyhebbar/INFO6205/tree/Spring2024/src/main/java/edu/neu/coe/info6205/sort/elementary

Task: Assignment 3 (Benchmark)

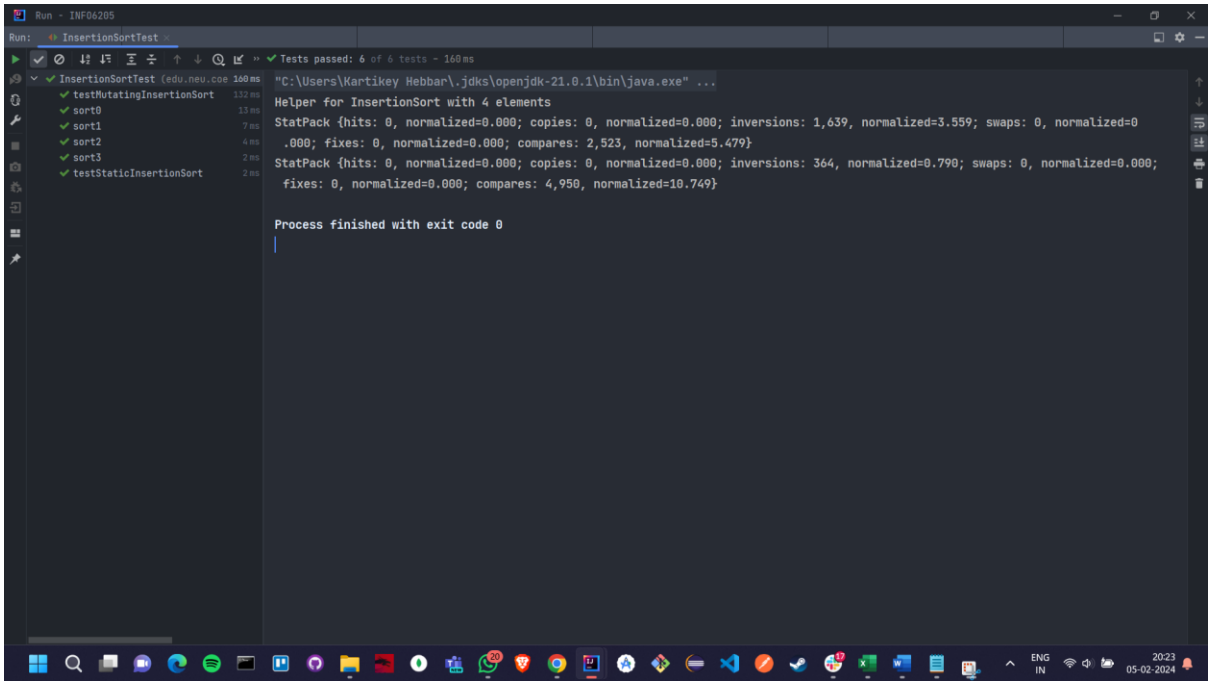
Relationship Conclusion:
Refer to the attached spreadsheet (Assignment_3_Statistical_Analysis.xlsx) with the detailed analysis of Time taken by Insertion Sort to sort a random array, an ordered array, partially ordered array and a reverse ordered array with respect to the increasing size of the array and number of repetitions performed on each array to get the mean time taken.

A general observation could be drawn that, with increasing number of repetitions (n), the mean time taken for any type of array starts decreasing. **The higher the value of n, the lower will be the mean time taken by the Insertion Sort algorithm for any given array**.

Another observation in this experiment is that with the increasing array size, the mean time taken by the algorithm reduces for the same value of n which shows that the algorithm might be performing better for larger array sizes.

Evidence to support that conclusion:
Refer to the attached spreadsheet (Assignment_3_Statistical_Analysis.xlsx) for a detailed report of the analysis to support the above conclusion.

Unit Test Screenshots: Screenshot of the successful unit tests:



Screenshot of the program output when size of array=5 and n=5,