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Program Structures & Algorithms

Fall 2021

Assignment No. 2

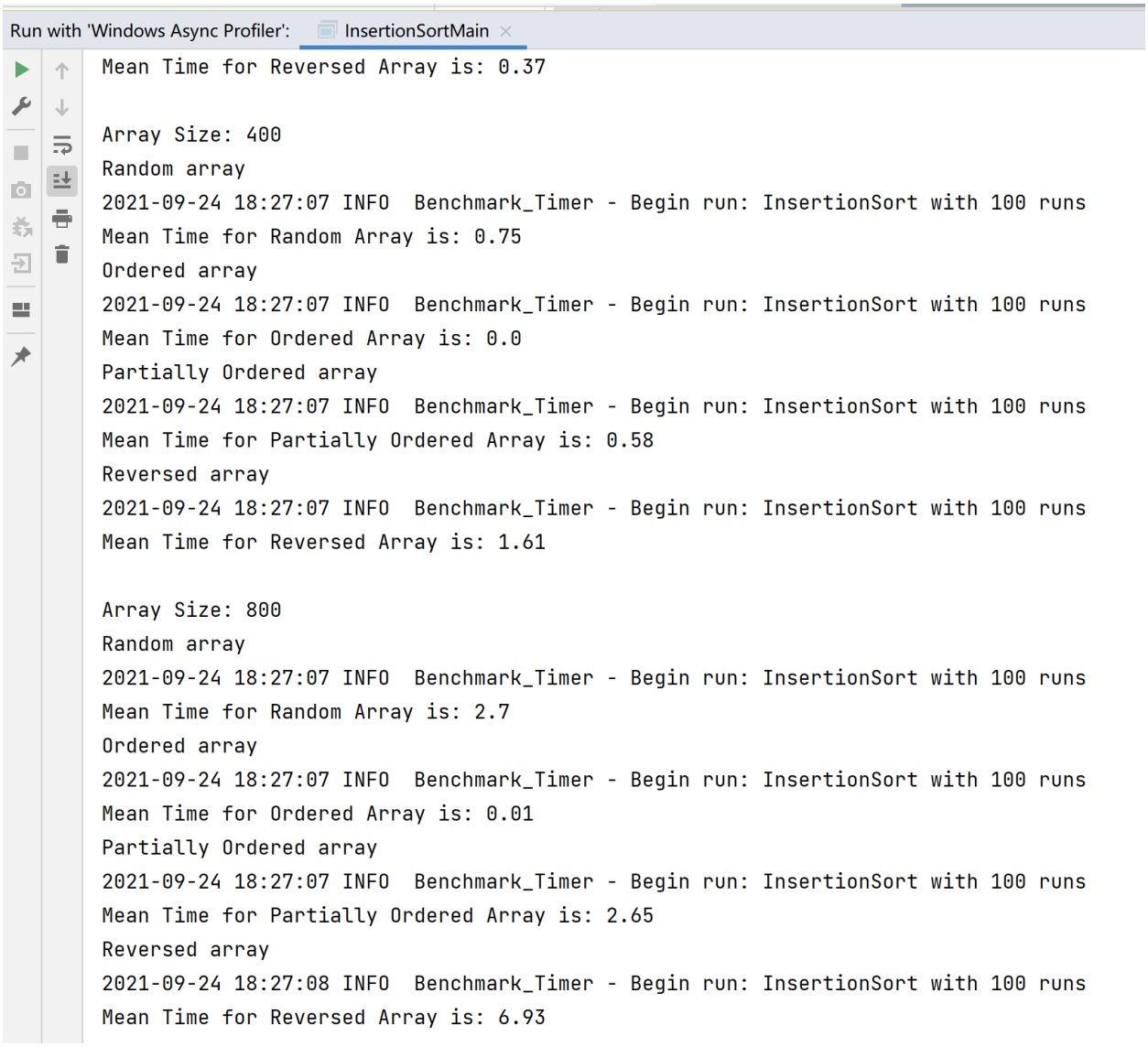
- **Task (List down the tasks performed in the Assignment)**
  1. You are to implement three methods of a class called Timer. Please see the skeleton class that I created in the repository.
  2. Implement InsertionSort (in the InsertionSort class) by simply looking up the insertion code used by Arrays.sort.
  3. Implement a main program (or you could do it via your own unit tests) to actually run the following benchmarks: measure the running times of this sort, using four different initial array ordering situations: random, ordered, partially-ordered and reverse-ordered.
- **Conclusion:**

  The ordered array takes the least time which is nearly 0.

  The reversed array takes the longest time to be sorted.

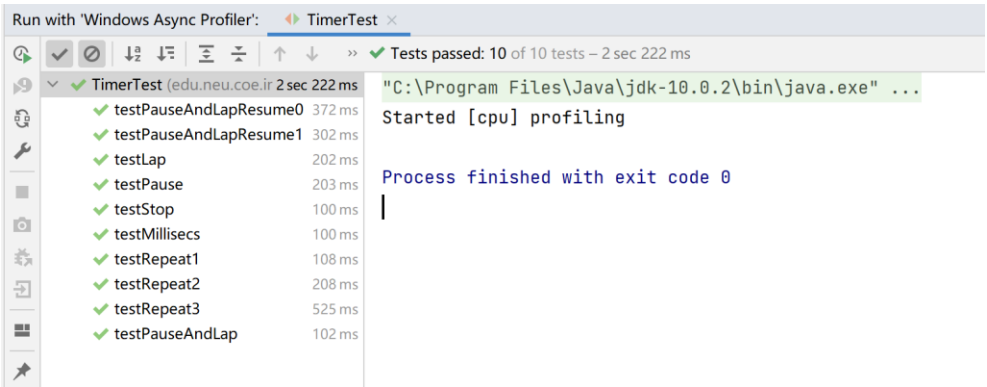
  The time of random array and partially-ordered array take is in the middle. The mean time of this two, depending on how much elements are in ordered, is close.
- **Evidence to support the conclusion:**

  Output (Snapshot of Code output in the terminal)

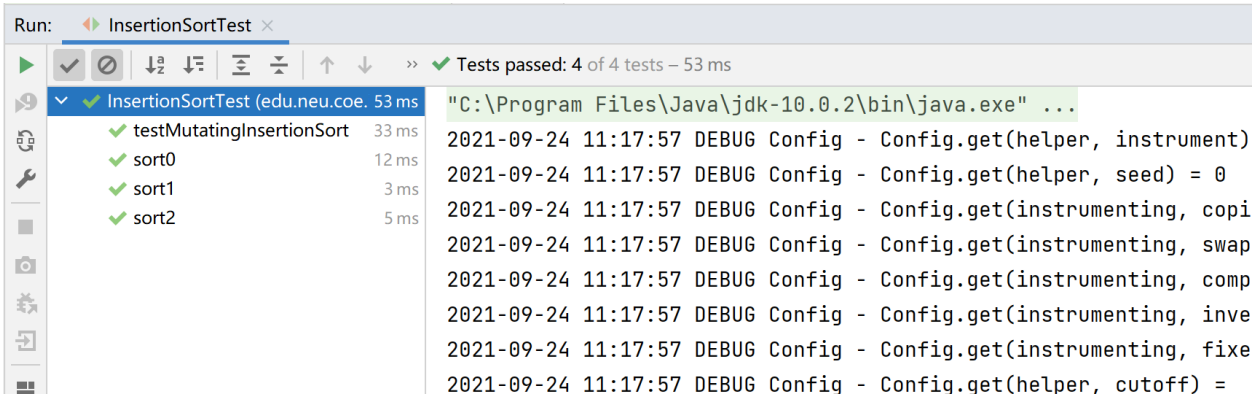


- **Unit tests result:(Snapshot of successful unit test run)**

1. TimerTest



2. InsertsionSortTest



3. BenchmarkTest