

Assignment 2

1. Observation

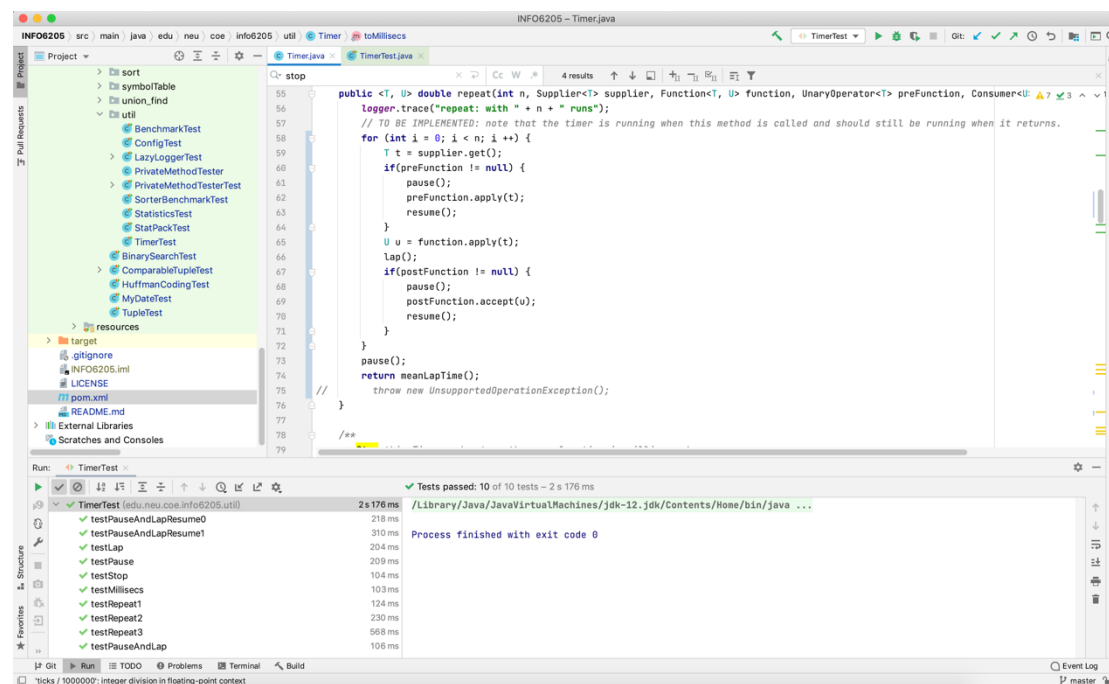
From the results of experiments, the longer the length of the array, the more time it takes.

For arrays of the same length, the time sequence required for sort is:

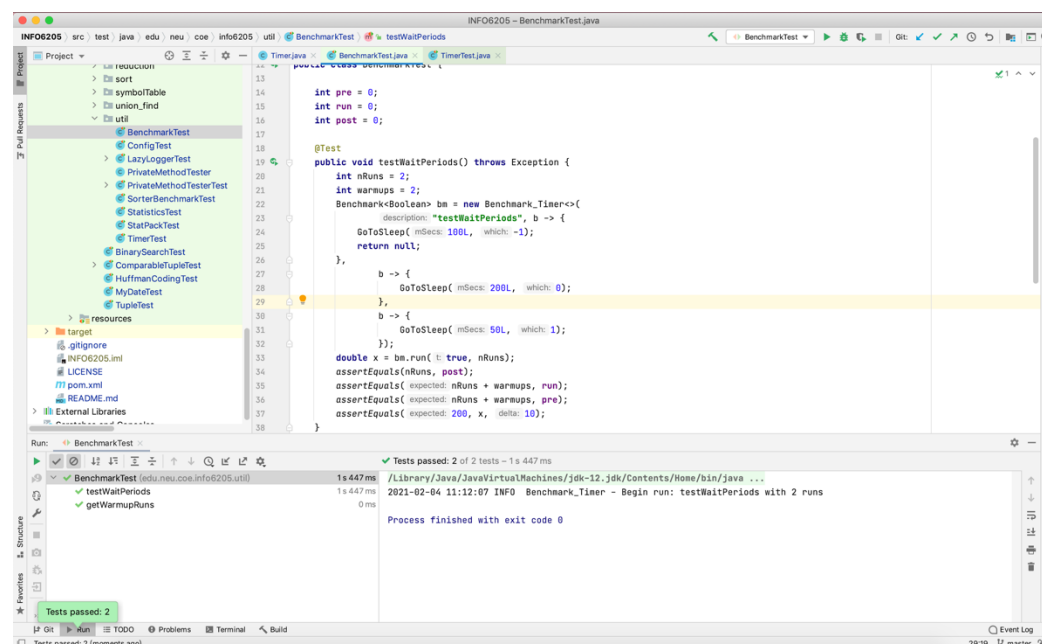
T (Ordered) < T (Partially Ordered) < T (Random) < T (Reversed)

2. Screenshots

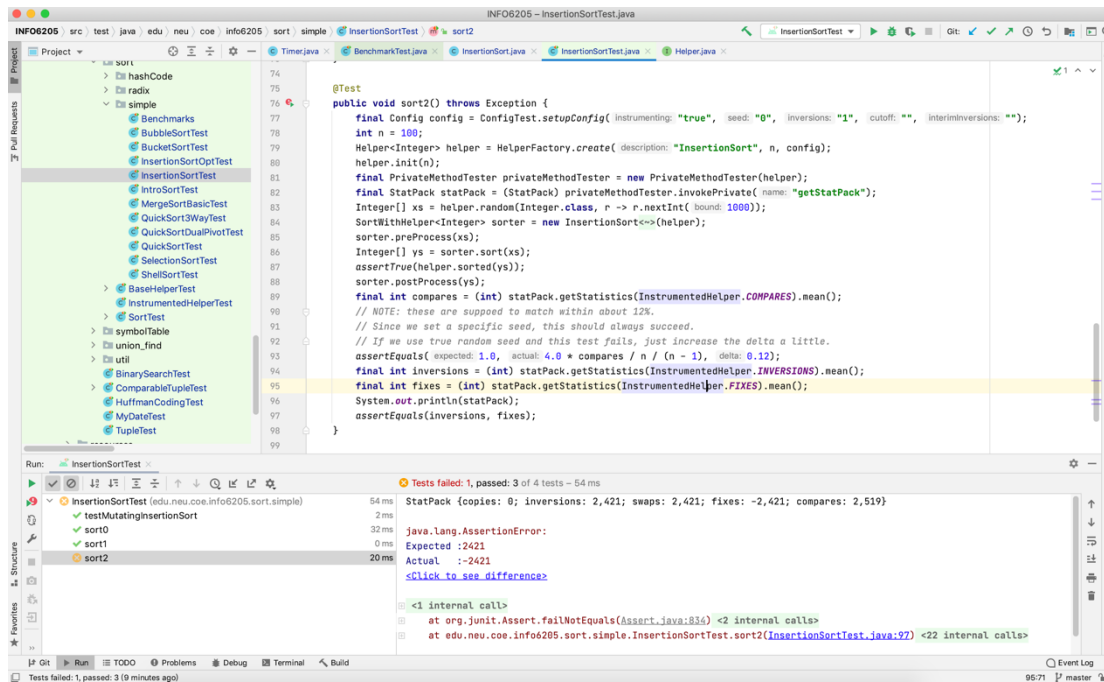
Timer Test



Benchmark Test



Insertion Sort Test



Experiment of Random Sort

2021-02-04 12:28:56 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:40
Routine Time:0.018
2021-02-04 12:28:56 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:80
Routine Time:0.022
2021-02-04 12:28:56 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:160
Routine Time:0.03
2021-02-04 12:28:56 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:320
Routine Time:0.106
2021-02-04 12:28:57 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:640
Routine Time:0.49
2021-02-04 12:28:57 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Random Sort
The number of elements:1280
Routine Time:2.362

Experiment of Ordered Sort

```
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:40
Routine Time:0.002
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:80
Routine Time:0.0
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:160
Routine Time:0.002
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:320
Routine Time:0.004
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:640
Routine Time:0.006
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Ordered Sort
The number of elements:1280
Routine Time:0.016
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```

Experiment of Partially Ordered Sort

```
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:40
Routine Time:0.004
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:80
Routine Time:0.006
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:160
Routine Time:0.026
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:320
Routine Time:0.076
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:640
Routine Time:0.288
2021-02-04 12:28:58 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Partially Ordered Sort
The number of elements:1280
Routine Time:1.362
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```

Experiment of Reversed Ordered Sort

```
2021-02-04 12:28:59 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:40
Routine Time:0.002
2021-02-04 12:28:59 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:80
Routine Time:0.012
2021-02-04 12:28:59 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:160
Routine Time:0.064
2021-02-04 12:28:59 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:320
Routine Time:0.19
2021-02-04 12:28:59 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:640
Routine Time:0.844
2021-02-04 12:29:00 INFO Benchmark_Timer - Begin run: MeasureRuningTimes with 500 runs
Reversed Ordered Sort
The number of elements:1280
Routine Time:3.164
```