

**INFO 6205**  
**PROGRAM STRUCTURES AND ALGORITHMS**  
**FALL 2018**  
**ASSIGNMENT 4- TEST CASES SCREENSHOT**

- **Test Cases Screenshot for**

1. For Cutoff from 5100 to 6000

```
Degree of parallelism: 3
cutoff:5100          10times Time:2845ms
cutoff:5100          Normal Time:2473ms
cutoff:5200          10times Time:2171ms
cutoff:5200          Normal Time:2326ms
cutoff:5300          10times Time:2642ms
cutoff:5300          Normal Time:2290ms
cutoff:5400          10times Time:2085ms
cutoff:5400          Normal Time:2355ms
cutoff:5500          10times Time:2128ms
cutoff:5500          Normal Time:2323ms
cutoff:5600          10times Time:2076ms
cutoff:5600          Normal Time:2324ms
cutoff:5700          10times Time:2065ms
cutoff:5700          Normal Time:2405ms
cutoff:5800          10times Time:2845ms
cutoff:5800          Normal Time:2558ms
cutoff:5900          10times Time:2236ms
cutoff:5900          Normal Time:2543ms
cutoff:6000          10times Time:2266ms
```

2. For Cutoff <4000

```
degree of parallelism: 3
Exception in thread "main" java.util.concurrent.CompletionException: java.util.con
    at java.util.concurrent.CompletableFuture.encodeThrowable(Unknown Source)
    at java.util.concurrent.CompletableFuture.completeThrowable(Unknown Source)
    at java.util.concurrent.CompletableFuture$AsyncSupply.run(Unknown Source)
    at java.util.concurrent.CompletableFuture$AsyncSupply.exec(Unknown Source)
    at java.util.concurrent.ForkJoinTask.doExec(Unknown Source)
    at java.util.concurrent.ForkJoinPool$WorkQueue.runTask(Unknown Source)
    at java.util.concurrent.ForkJoinPool.runWorker(Unknown Source)
    at java.util.concurrent.ForkJoinWorkerThread.run(Unknown Source)
Caused by: java.util.concurrent.RejectedExecutionException: Thread limit exceeded
    at java.util.concurrent.ForkJoinPool.tryCompensate(Unknown Source)
    at java.util.concurrent.ForkJoinPool.managedBlock(Unknown Source)
    at java.util.concurrent.CompletableFuture.waitingGet(Unknown Source)
    at java.util.concurrent.CompletableFuture.join(Unknown Source)
    at edu.neu.coe.info6205.sort.par.ParSort.sort(ParSort.java:45)
    at edu.neu.coe.info6205.sort.par.ParSort.lambda$2(ParSort.java:55)
    ... 6 more
```

### 3. Cutoff just before best case

```
degree of parallelism: 3
cutoff:765000      10times Time:2628ms
cutoff:765000      Normal Time:2359ms
cutoff:780000      10times Time:2306ms
cutoff:780000      Normal Time:2355ms
cutoff:795000      10times Time:2388ms
cutoff:795000      Normal Time:2665ms
cutoff:810000      10times Time:2477ms
cutoff:810000      Normal Time:2587ms
cutoff:825000      10times Time:2475ms
cutoff:825000      Normal Time:2565ms
cutoff:840000      10times Time:2597ms
cutoff:840000      Normal Time:2586ms
cutoff:855000      10times Time:2552ms
cutoff:855000      Normal Time:2600ms
cutoff:870000      10times Time:2581ms
cutoff:870000      Normal Time:2576ms
cutoff:885000      10times Time:2573ms
cutoff:885000      Normal Time:2598ms
cutoff:900000      10times Time:2453ms
cutoff:900000      Normal Time:2579ms
cutoff:915000      10times Time:2348ms
cutoff:915000      Normal Time:2390ms
cutoff:930000      10times Time:2260ms
```

#### 4. Cutoff for the best case that is

```
Degree of parallelism: 3
cutoff:1020000      10times Time:1984ms
cutoff:1020000      Normal Time:2374ms
cutoff:1040000      10times Time:1595ms
cutoff:1040000      Normal Time:2351ms
cutoff:1060000      10times Time:1581ms
cutoff:1060000      Normal Time:2354ms
cutoff:1080000      10times Time:1613ms
cutoff:1080000      Normal Time:2415ms
cutoff:1100000      10times Time:1744ms
cutoff:1100000      Normal Time:2581ms
cutoff:1120000      10times Time:1763ms
cutoff:1120000      Normal Time:2539ms
cutoff:1140000      10times Time:1748ms
cutoff:1140000      Normal Time:2563ms
cutoff:1160000      10times Time:1634ms
cutoff:1160000      Normal Time:2367ms
cutoff:1180000      10times Time:1625ms
cutoff:1180000      Normal Time:2385ms
cutoff:1200000      10times Time:1592ms
```

#### 5. Cutoff for the best case

```
Degree of parallelism: 3
cutoff:40800      10times Time:2316ms
cutoff:40800      Normal Time:2443ms
cutoff:41600      10times Time:1841ms
cutoff:41600      Normal Time:2339ms
cutoff:42400      10times Time:1768ms
cutoff:42400      Normal Time:2381ms
cutoff:43200      10times Time:1990ms
cutoff:43200      Normal Time:2438ms
cutoff:44000      10times Time:1926ms
cutoff:44000      Normal Time:2438ms
cutoff:44800      10times Time:2034ms
cutoff:44800      Normal Time:2452ms
cutoff:45600      10times Time:1866ms
cutoff:45600      Normal Time:2427ms
cutoff:46400      10times Time:1794ms
cutoff:46400      Normal Time:2538ms
cutoff:47200      10times Time:1887ms
cutoff:47200      Normal Time:2394ms
cutoff:48000      10times Time:1887ms
cutoff:48000      Normal Time:2385ms
cutoff:48800      10times Time:1885ms
```