

```
1 /Users/Aashay/Library/Java/JavaVirtualMachines/
  openjdk-19.0.2/Contents/Home/bin/java -javaagent:/
  Applications/IntelliJ IDEA CE.app/Contents/lib/
  idea_rt.jar=64648:/Applications/IntelliJ IDEA CE.
  app/Contents/bin -Dfile.encoding=UTF-8 -Dsun.stdout
  .encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -
  classpath /Users/Aashay/Desktop/Spring2023/PSA/
  INF06205/target/classes:/Users/Aashay/.m2/
  repository/com/phasmidsoftware/args_2.13/1.0.3/
  args_2.13-1.0.3.jar:/Users/Aashay/.m2/repository/
  org/scala-lang/scala-library/2.13.7/scala-library-2
  .13.7.jar:/Users/Aashay/.m2/repository/org/scala-
  lang/modules/scala-parser-combinators_2.13/1.1.2/
  scala-parser-combinators_2.13-1.1.2.jar:/Users/
  Aashay/.m2/repository/org/apache/logging/log4j/
  log4j-api/2.19.0/log4j-api-2.19.0.jar:/Users/Aashay
  /.m2/repository/log4j/log4j/1.2.17/log4j-1.2.17.jar
  :/Users/Aashay/.m2/repository/com/google/guava/
  guava/31.1-jre/guava-31.1-jre.jar:/Users/Aashay/.m2
  /repository/com/google/guava/failureaccess/1.0.1/
  failureaccess-1.0.1.jar:/Users/Aashay/.m2/
  repository/com/google/guava/listenablefuture/9999.0
  -empty-to-avoid-conflict-with-guava/
  listenablefuture-9999.0-empty-to-avoid-conflict-
  with-guava.jar:/Users/Aashay/.m2/repository/com/
  google/code/findbugs/jsr305/3.0.2/jsr305-3.0.2.jar
  :/Users/Aashay/.m2/repository/org/checkerframework/
  checker-qual/3.12.0/checker-qual-3.12.0.jar:/Users/
  Aashay/.m2/repository/com/google/errorprone/
  error_prone_annotations/2.11.0/
  error_prone_annotations-2.11.0.jar:/Users/Aashay/.
  m2/repository/com/google/j2objc/j2objc-annotations/
  1.3/j2objc-annotations-1.3.jar:/Users/Aashay/.m2/
  repository/org/ini4j/ini4j/0.5.4/ini4j-0.5.4.jar
  edu.neu.coe.info6205.sort.linearithmic.MergeSort
2 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
  run: Sorting with 20 runs
3 When array size is: 1000
4 Compares: 363699
5 Swaps: 256277
6 Hits: 1413664
```

```
7 Time: 0.6358374999999999
8
9 For referencs: 1000      363699  256277  1413664 0.
  6358374999999999
10
11 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
   run: Sorting with 20 runs
12 When array size is: 2000
13 Compares: 1240875
14 Swaps: 1004005
15 Hits: 4881184
16 Time: 0.45551875
17
18 For referencs: 2000      1240875 1004005 4881184 0.
   45551875
19
20 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
   run: Sorting with 20 runs
21 When array size is: 4000
22 Compares: 4526426
23 Swaps: 4008664
24 Hits: 17941028
25 Time: 0.50321875
26
27 For referencs: 4000      4526426 4008664 17941028
   0.50321875
28
29 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
   run: Sorting with 20 runs
30 When array size is: 8000
31 Compares: 17247440
32 Swaps: 16123889
33 Hits: 68660354
34 Time: 0.82983125
35
36 For referencs: 8000      17247440      16123889
   68660354      0.82983125
37
38 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
   run: Sorting with 20 runs
39 When array size is: 16000
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40 Compares: 66423764
41 Swaps: 64000626
42 Hits: 265036172
43 Time: 1.2005625
44
45 For references: 16000    66423764    64000626
    265036172    1.2005625
46
47 2023-03-12 19:12:14 INFO Benchmark_Timer - Begin
    run: Sorting with 20 runs
48 When array size is: 32000
49 Compares: 260879182
50 Swaps: 255680875
51 Hits: 1042198898
52 Time: 2.5460604499999997
53
54 For references: 32000    260879182    255680875
    1042198898    2.5460604499999997
55
56 2023-03-12 19:12:16 INFO Benchmark_Timer - Begin
    run: Sorting with 20 runs
57 When array size is: 64000
58 Compares: 1032736073
59 Swaps: 1021635435
60 Hits: -166658712
61 Time: 6.248975
62
63 For references: 64000    1032736073    1021635435    -
    166658712    6.248975
64
65
66 Process finished with exit code 0
67
```