```
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=61805:/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/
   INFO6205/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 00:23:16 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
3 When array size is: 10000
4 Compares: 26256645
5 Swaps: 24835299
6 hits: 104621136
```

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 7 Time: 0.7418875
 8
 9
10
11 2023-03-12 00:23:16 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
12 When array size is: 15000
13 Compares: 58222852
14 Swaps: 56034235
15 hits: 232290606
16 Time: 1.0146666500000001
17
18
19
20 2023-03-12 00:23:16 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
21 When array size is: 20000
22 Compares: 102895631
23 Swaps: 99832908
24 hits: 410771574
25 Time: 1.3457042
26
27
28
29 2023-03-12 00:23:17 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
30 When array size is: 25000
31 Compares: 159871985
32 Swaps: 156038827
33 hits: 638455240
34 Time: 1.5363875
35
36
37
38 2023-03-12 00:23:18 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
39 When array size is: 30000
40 Compares: 229057250
41 Swaps: 224349989
42 hits: 915027342
43 Time: 1.9631667
```

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44
45
46
47 2023-03-12 00:23:19 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
48 When array size is: 35000
49 Compares: 312944245
50 Swaps: 307222080
51 hits: 1250448250
52 Time: 2.6712333
53
54
55
56 2023-03-12 00:23:20 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
57 When array size is: 40000
58 Compares: 405959619
59 Swaps: 399394145
60 hits: 1622216520
61 Time: 3.0104395999999998
62
63
64
65 2023-03-12 00:23:22 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
66 When array size is: 45000
67 Compares: 509396686
68 Swaps: 502020116
69 hits: 2035800404
70 Time: 3.0494375
71
72
73
74 2023-03-12 00:23:25 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
75 When array size is: 50000
76 Compares: 636492165
77 Swaps: 628275814
78 hits: -1751064106
79 Time: 3.258025
80
```

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81
82
83 2023-03-12 00:23:27 INFO  Benchmark_Timer - Begin
   run: Sorting with with 20 runs
84 When array size is: 55000
85 Compares: 764221689
86 Swaps: 755201987
87 hits: -1240279416
88 Time: 3.5393603999999996
89
90
91
92
93 Process finished with exit code 0
94
```