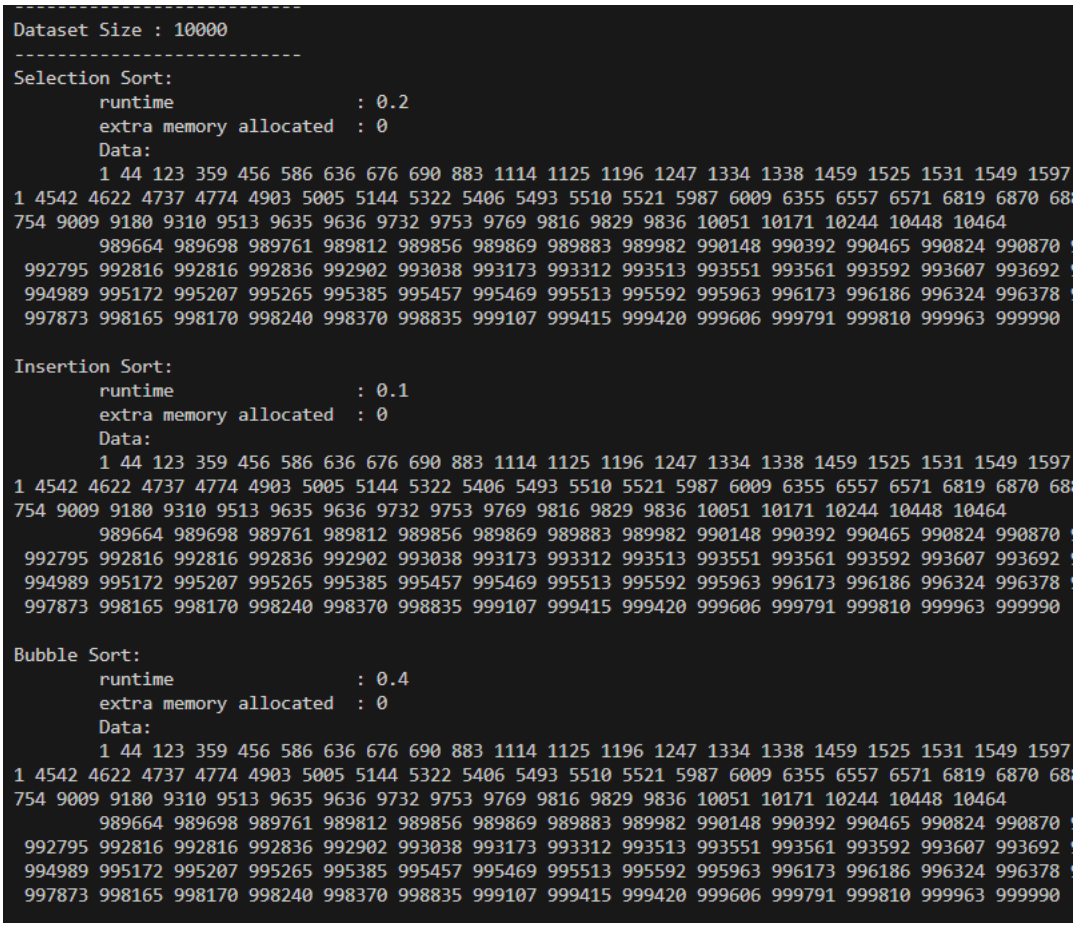
URL: https://github.com/ycamagay/repository

All sorting functions behave the same way, arranging the given data from smallest to largest. But as the data increased, the runtime also increased. The biggest difference in run time can be seen. Merge sort and heap sort is seemingly faster than others, with bubble sort being the slowest and heap sort being the fastest.

The following are the outputs for input1 and input2.



```
Merge Sort:
        runtime                 : 0.0
        extra memory allocated  : 0
        Data:
        1 44 123 359 456 586 636 676 690 883 1114 1125 1196 1247 1334 1338 1459 1525 1531 1549 1597
 1 4542 4622 4737 4774 4903 5005 5144 5322 5406 5493 5510 5521 5987 6009 6355 6557 6571 6819 6870 68
 754 9009 9180 9310 9513 9635 9636 9732 9753 9769 9816 9829 9836 10051 10171 10244 10448 10464
        989664 989698 989761 989812 989856 989869 989883 989982 990148 990392 990465 990824 990870
  992795 992816 992816 992836 992902 993038 993173 993312 993513 993551 993561 993592 993607 993692
  994989 995172 995207 995265 995385 995457 995469 995513 995592 995963 996173 996186 996324 996378
  997873 998165 998170 998240 998370 998835 999107 999415 999420 999606 999791 999810 999963 999990

 Heap Sort:
        runtime                 : 0.0
        extra memory allocated  : 0
        Data:
        1 44 123 359 456 586 636 676 690 883 1114 1125 1196 1247 1334 1338 1459 1525 1531 1549 1597
 1 4542 4622 4737 4774 4903 5005 5144 5322 5406 5493 5510 5521 5987 6009 6355 6557 6571 6819 6870 68
 754 9009 9180 9310 9513 9635 9636 9732 9753 9769 9816 9829 9836 10051 10171 10244 10448 10464
        989698 989761 989812 989856 989869 989883 989982 990148 990392 990465 990824 990870 990895
  992816 992816 992836 992902 993038 993173 993312 993513 993551 993561 993592 993607 993692 993866
  995172 995207 995265 995385 995457 995469 995513 995592 995963 996173 996186 996324 996378 996379
  998165 998170 998240 998370 998835 999107 999415 999420 999606 999791 999810 999963 999990 823682
```

```
---------------------------
Dataset Size : 100000
---------------------------
Selection Sort:
       runtime                 : 25.3
       extra memory allocated  : 0
       Data:
       5 6 64 122 171 369 401 499 667 794 1005 1281 1414 1822 2076 2342 2460 2545 2616 2620 2674 2752
4867 5004 5173 5233 5236 5689 5806 5832 5913 5939 6006 6074 6182 6200 6208 6323 6512 6622 6935 7039 709
6 8807 8809 8882 8947 9003 9174 9175 9199 9261 9379 9438 9530 9547 9801 9948 9994 10176
       9990069 9990122 9990161 9990205 9990206 9990213 9990219 9990234 9990270 9990291 9990445 9990504
1419 9991425 9991464 9991510 9991637 9991785 9991787 9991794 9991834 9992003 9992118 9992401 9992401 99
3 9994403 9994490 9994496 9994560 9994645 9994707 9994760 9994824 9994934 9994999 9995012 9995097 99951
997536 9997540 9997737 9997798 9997853 9997920 9997970 9997981 9998000 9998088 9998144 9998157 9998240

Insertion Sort:
       runtime                 : 14.8
       extra memory allocated  : 0
       Data:
       5 6 64 122 171 369 401 499 667 794 1005 1281 1414 1822 2076 2342 2460 2545 2616 2620 2674 2752
4867 5004 5173 5233 5236 5689 5806 5832 5913 5939 6006 6074 6182 6200 6208 6323 6512 6622 6935 7039 709
6 8807 8809 8882 8947 9003 9174 9175 9199 9261 9379 9438 9530 9547 9801 9948 9994 10176
       9990069 9990122 9990161 9990205 9990206 9990213 9990219 9990234 9990270 9990291 9990445 9990504
1419 9991425 9991464 9991510 9991637 9991785 9991787 9991794 9991834 9992003 9992118 9992401 9992401 99
3 9994403 9994490 9994496 9994560 9994645 9994707 9994760 9994824 9994934 9994999 9995012 9995097 99951
997536 9997540 9997737 9997798 9997853 9997920 9997970 9997981 9998000 9998088 9998144 9998157 9998240

Bubble Sort:
       runtime                 : 60.5
       extra memory allocated  : 0
       Data:
       5 6 64 122 171 369 401 499 667 794 1005 1281 1414 1822 2076 2342 2460 2545 2616 2620 2674 2752
4867 5004 5173 5233 5236 5689 5806 5832 5913 5939 6006 6074 6182 6200 6208 6323 6512 6622 6935 7039 709
6 8807 8809 8882 8947 9003 9174 9175 9199 9261 9379 9438 9530 9547 9801 9948 9994 10176
       9990069 9990122 9990161 9990205 9990206 9990213 9990219 9990234 9990270 9990291 9990445 9990504
1419 9991425 9991464 9991510 9991637 9991785 9991787 9991794 9991834 9992003 9992118 9992401 9992401 99
3 9994403 9994490 9994496 9994560 9994645 9994707 9994760 9994824 9994934 9994999 9995012 9995097 99951
997536 9997540 9997737 9997798 9997853 9997920 9997970 9997981 9998000 9998088 9998144 9998157 9998240
```

```
Merge Sort:
        runtime                 : 0.2
        extra memory allocated  : 0
        Data:
        5 6 64 122 171 369 401 499 667 794 1005 1281 1414 1822 2076 2342 2460 2545 2616 2620 2674 275
4867 5004 5173 5233 5236 5689 5806 5832 5913 5939 6006 6074 6182 6200 6208 6323 6512 6622 6935 7039 7
6 8807 8809 8882 8947 9003 9174 9175 9199 9261 9379 9438 9530 9547 9801 9948 9994 10176
        9990069 9990122 9990161 9990205 9990206 9990213 9990219 9990234 9990270 9990291 9990445 99905
1419 9991425 9991464 9991510 9991637 9991785 9991787 9991794 9991834 9992003 9992118 9992401 9992401
3 9994403 9994490 9994496 9994560 9994645 9994707 9994760 9994824 9994934 9994999 9995012 9995097 999
997536 9997540 9997737 9997798 9997853 9997920 9997970 9997981 9998000 9998088 9998144 9998157 999824

Heap Sort:
        runtime                 : 0.1
        extra memory allocated  : 0
        Data:
        5 6 64 122 171 369 401 499 667 794 1005 1281 1414 1822 2076 2342 2460 2545 2616 2620 2674 275
4867 5004 5173 5233 5236 5689 5806 5832 5913 5939 6006 6074 6182 6200 6208 6323 6512 6622 6935 7039 7
6 8807 8809 8882 8947 9003 9174 9175 9199 9261 9379 9438 9530 9547 9801 9948 9994 10176
        9990122 9990161 9990205 9990206 9990213 9990219 9990234 9990270 9990291 9990445 9990504 99906
1425 9991464 9991510 9991637 9991785 9991787 9991794 9991834 9992003 9992118 9992401 9992401 9992542
3 9994490 9994496 9994560 9994645 9994707 9994760 9994824 9994934 9994999 9995012 9995097 9995100 999
997540 9997737 9997798 9997853 9997920 9997970 9997981 9998000 9998088 9998144 9998157 9998240 999833
```