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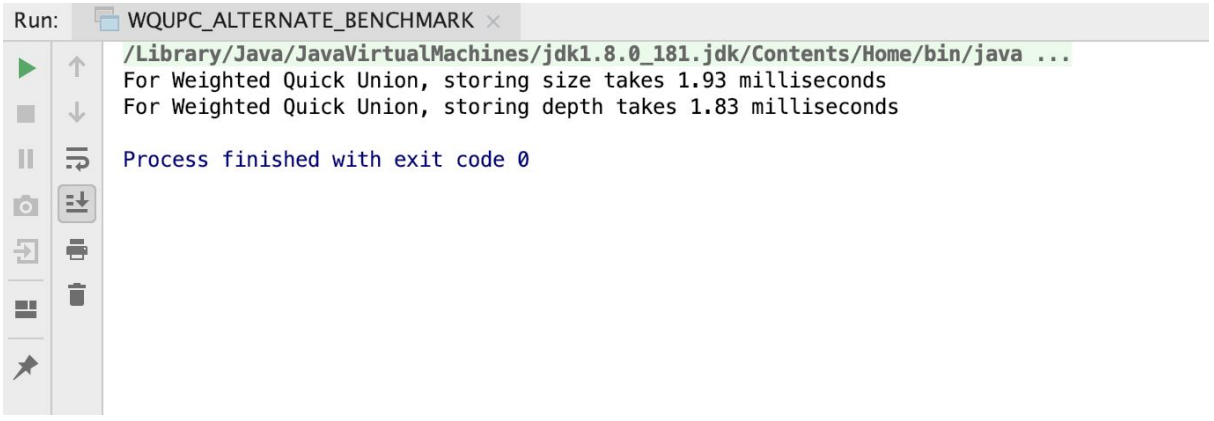
INFO 6205 Program Structure & Algorithms
Spring 2021
Assignment 4

Task 1:

For weighted quick union, store the depth rather than the size. If you can explain why alternative #1 is unnecessary to be benchmarked, you may skip benchmarking that one.

Output:

I have generated output for 15000 sites and benchmarked it. It is unnecessary to benchmark weighted unions by depth because the running time for both by size and depth are **approximately the same**. So storing by depth doesn't help in reducing run time.



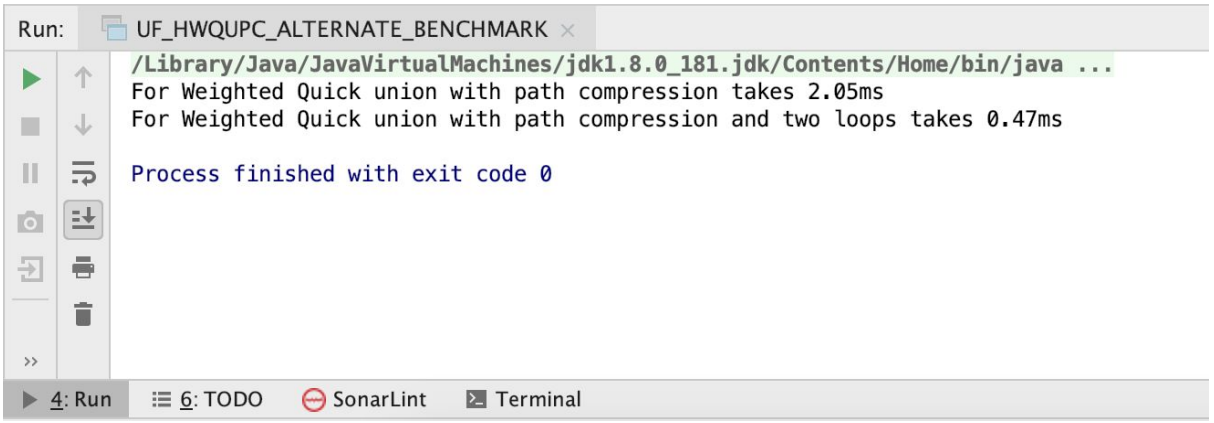
1.1 Benchmark Results

Task 2:

For weighted quick union with path compression, do two loops, so that all intermediate nodes point to the root, not just the alternates.

Output:

Weighted union with Path compression for 15000 sites and with two loops improves the runtime performance compared to the previous solution.



2.1 Benchmark Results