Student Name：**Jiachen Luo (001061582)**

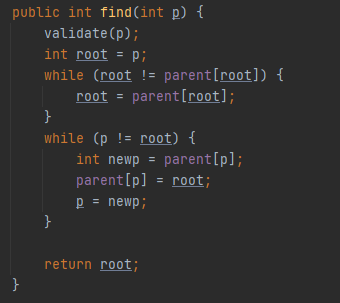
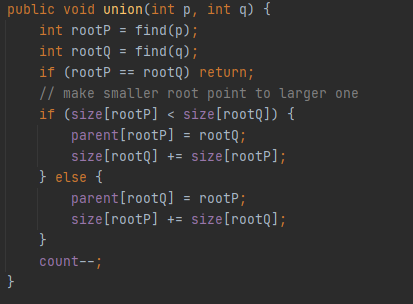
**INFO 6205**

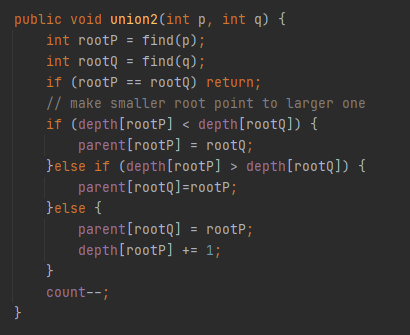
**Program Structure & Algorithms**

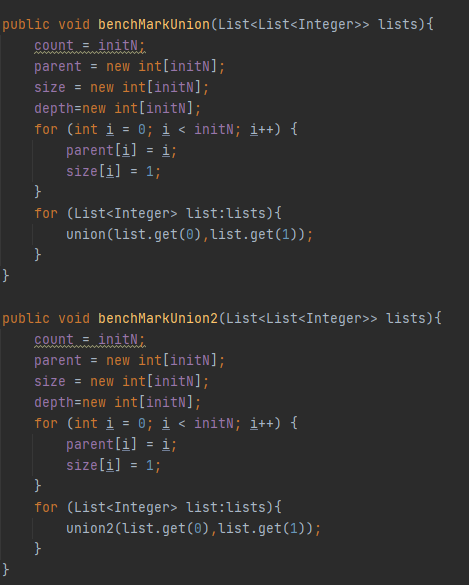
**Spring 2021**

**Assignment4**

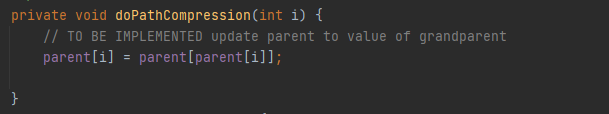
**Task:** For weighted quick union, store the depth rather than the size. For weight quick union with path compression, do two loops.





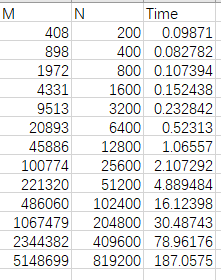




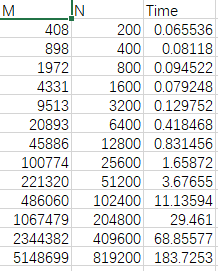


**Output:**

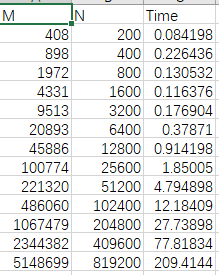
Depth2loop.csv



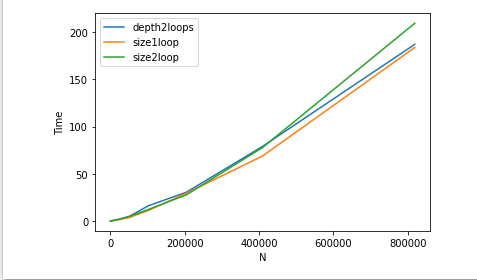
Size1loop.csv



Size2loop.csv:

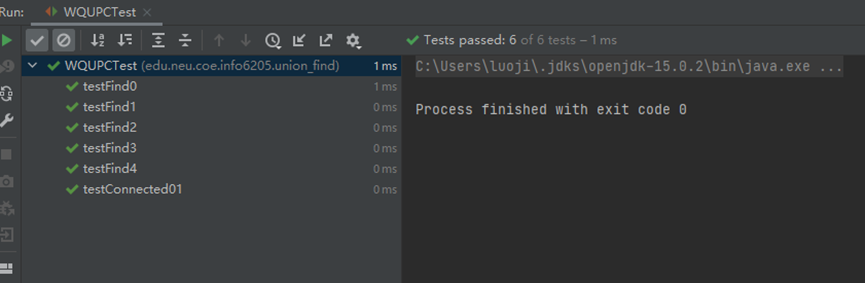


**Graphical representation:**



**Unit tests result:**

UF\_HWQUPC\_test

****

**Conclusion:** As can be seen from figure, the benchmark time of the size1loop algorithm is smaller than the nested loop (depth2loop and size2loop) and as the value of N increases, the benchmark time of size2loop should be gradually smaller than that of depth2loop. In short, the benchmark time of a single-layer loop is always less than multiple cycles