Program Structure and Algorithms
Assignment - 3 Weighted Quick Union with Path Compression (WQUPC)

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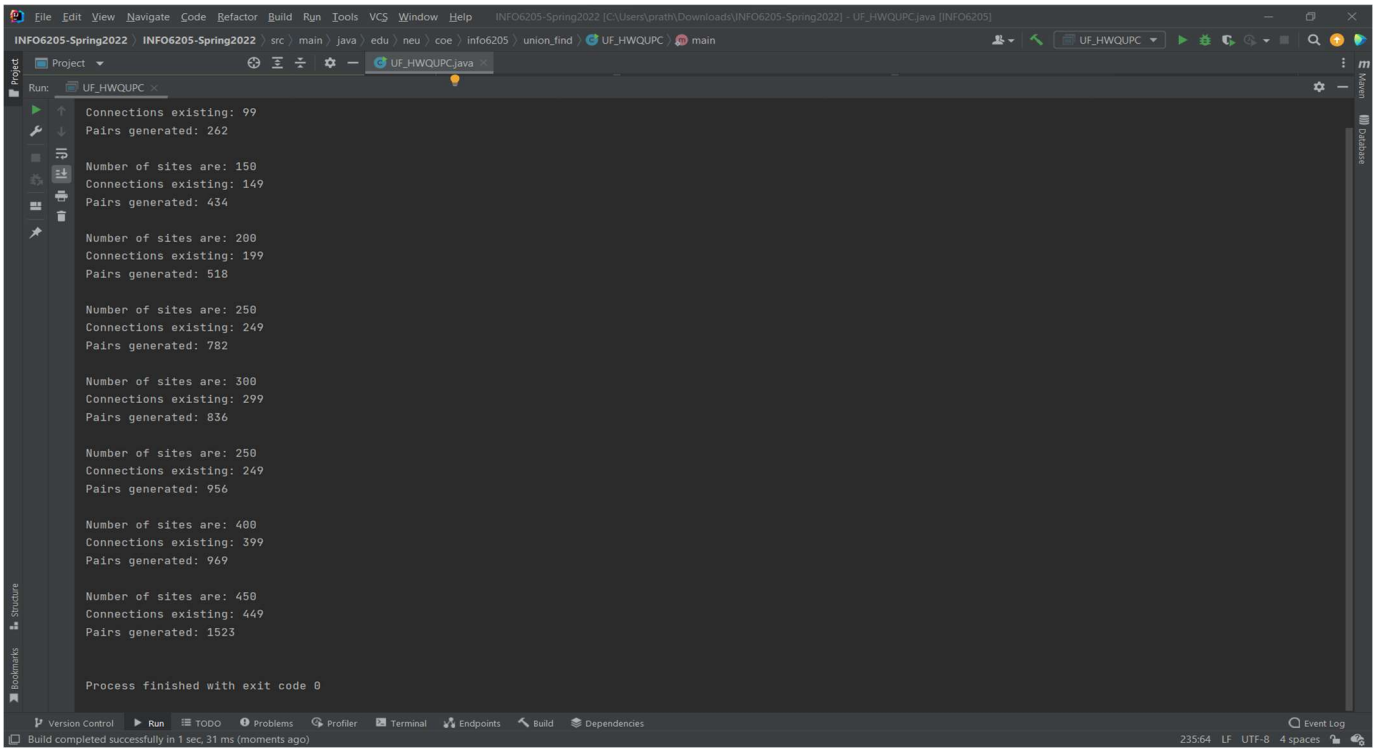
TASK:

1. Implement the method doPathCompressions which should implement the single-pass path-halving mechanics of path compression by changing the parent of the node by it's parent's parent.
2. Implement the method mergeComponents while checking if the arguments are not same (return if same). If they are not connected, find those and compare their parent's height and assign the smaller height to the new parent of the larger element. Do the same thing if height of second element is less than
3. Implement the method find which looks for

OUTPUT:



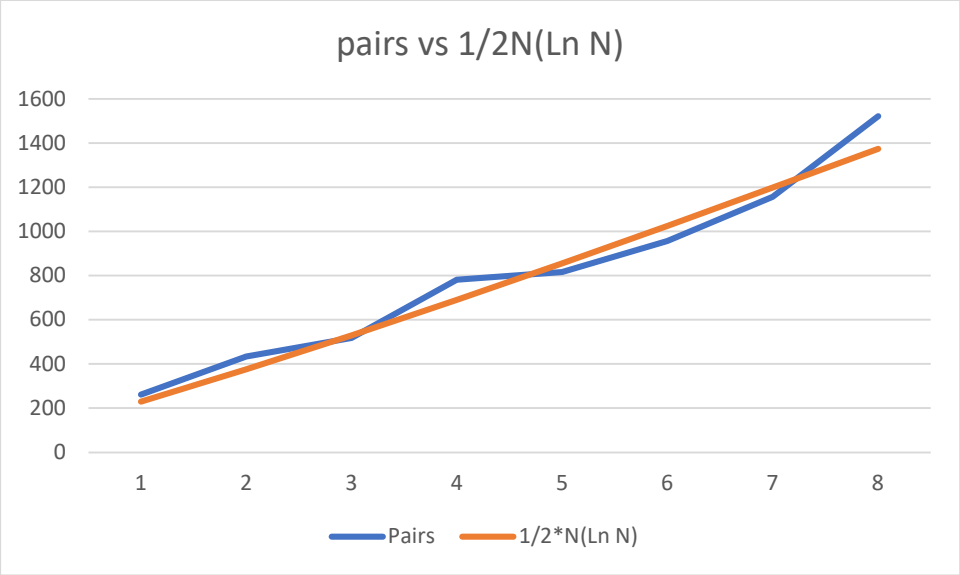
CONCLUSION:

From the results, we can conclude that the relationship between number of objects(n) and numbers of pairs(m) is as follows:

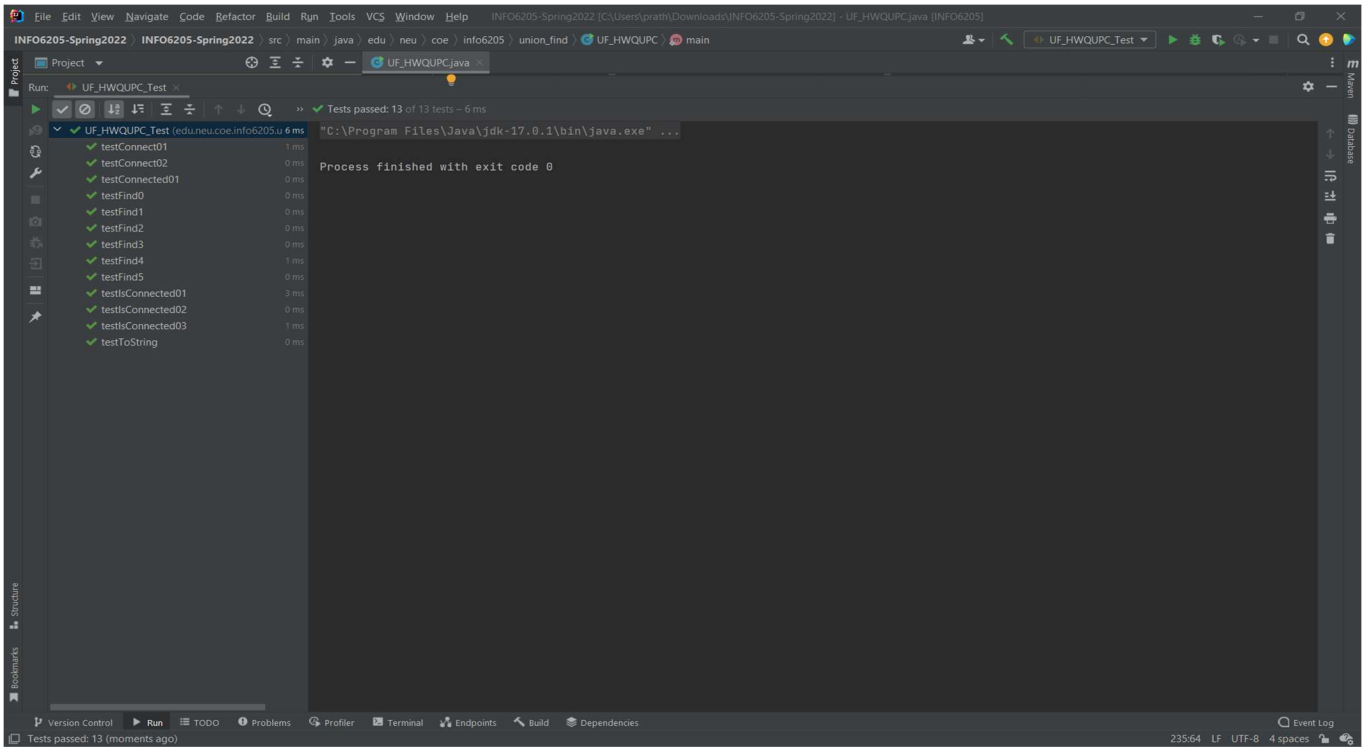
M = ½ * N (Ln N)

EVIDENCE:

Sites	Pairs	1/2*N(Ln N)
100	262	230.2585093
150	434	375.7976471
200	518	529.8317367
250	782	690.1826147
300	816	855.5673712
350	956	1025.138302
400	1156	1198.292909
450	1523	1374.580706



UNIT TESTS:


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
INFO6205-Spring2022 [C:\Users\prath\Downloads\INFO6205-Spring2022] - UF_HWQUPC.java [INFO6205]
INFO6205-Spring2022 › INFO6205-Spring2022 › src › main › java › edu › neu › coe › info6205 › union_find › UF_HWQUPC › main
UF_HWQUPC_Test
Project
UF_HWQUPC.java
Run: UF_HWQUPC_Test
Tests passed: 13 of 13 tests – 6 ms
UF_HWQUPC_Test (edu.neu.coe.info6205.u 6 ms
testConnect01 1 ms
testConnect02 0 ms
testConnected01 0 ms
testFind0 0 ms
testFind1 0 ms
testFind2 0 ms
testFind3 0 ms
testFind4 1 ms
testFind5 0 ms
testIsConnected01 3 ms
testIsConnected02 0 ms
testIsConnected03 1 ms
testToString 0 ms
"C:\Program Files\Java\jdk-17.0.1\bin\java.exe" ...
Process finished with exit code 0
Version Control
Run
TODO
Problems
Profiler
Terminal
Endpoints
Build
Dependencies
Event Log
Tests passed: 13 (moments ago)
235:64 LF UTF-8 4 spaces
Maven
Database
Structure
Bookmarks