Unit Test & Stress Test Results

Unit Test Results (Accuracy Check)

I ran three basic tests to make sure add, modify, and delete work correctly. All assertions passed on the first try. Below are the test results.

Test Case	What It Does	Result
testAddOrder()	Add a new order and check lookup	Passed
testModifyOrder()	Change price/quantity and verify update	Passed
testDeleteOrder()	Delete from both lookup and level map	Passed

Everything stayed consistent after each operation. No leftover entries, and level counts dropped correctly when a price level became empty.

Stress Test Results (Load Stability)

Two stress tests were used to push both versions to 100k operations. First was pure insertion, and second mixed modify and delete operations. Ran each several times to check for leaks or crashes.

Scenario	Orders	Errors	Memory Leaks	Result
Insert only	100,000	0	None	Stable
Modify + Delete	100,000	0	None	Stable
Repeated runs (x5)	500,000	0	None	Stable

No data corruption or instability observed. CPU usage grew linearly with load, which is what I expected. Didn’t spot any memory leaks or unusual slowdowns either.

In short: all tests passed, and both versions handled stress smoothly. The optimized one shaved off some time, but correctness stayed identical.