**Stock Market Trading Transaction Tracker**

**Inserting a Trade:**

**For Best and worst Trades ,** Two pushes—one into max‑heap and one into min‑heap—each has Time complexity of O(logn)

**AVL Insertion:**

O(log n) worst‑case for insert\_node, including at most a constant number of rotations in a balanced AVL tree

**Combined per Trade:** O(log n) (constants dropped)

Retrieving Best or Worst Trade 🡺 O(1)

**Updating All Prices :**

1. **Simulate Fluctuations:** Loop over n trades 🡺 O(n)
2. **Rebuild Data Structures:**

a)Re‑initialize both Transaction Tracker and Portfolio Manager.

b)Re-insert n trades into two heaps and AVL tree 🡺 n × [2·O(log n) + O(log n)] = O(n log n).

1. **Update Stock History -** Constant‑time candle update per trade 🡺 O(n).
2. **Refresh GUI Table** – Delete + re‑insert n rows in Tree view 🡺 O(n).
3. **Update Symbol List -** Sort s unique symbols 🡺 O(s log s)

**Total🡺** O(n log n + s log s + n) = **O(n log n + s log s)**

In practice, since s ≤ n, this simplifies to 🡺**O(n log n)**