

# MP3 Timing Report

Input file: perf.csv

Total runs: 150

Sizes: 20, 1000, 10000, 30000, 50000

Sort types: Insertion, Merge, Quick (qsort\_r), Selection (Iterative), Selection (Recursive)

Fields: gen, ip

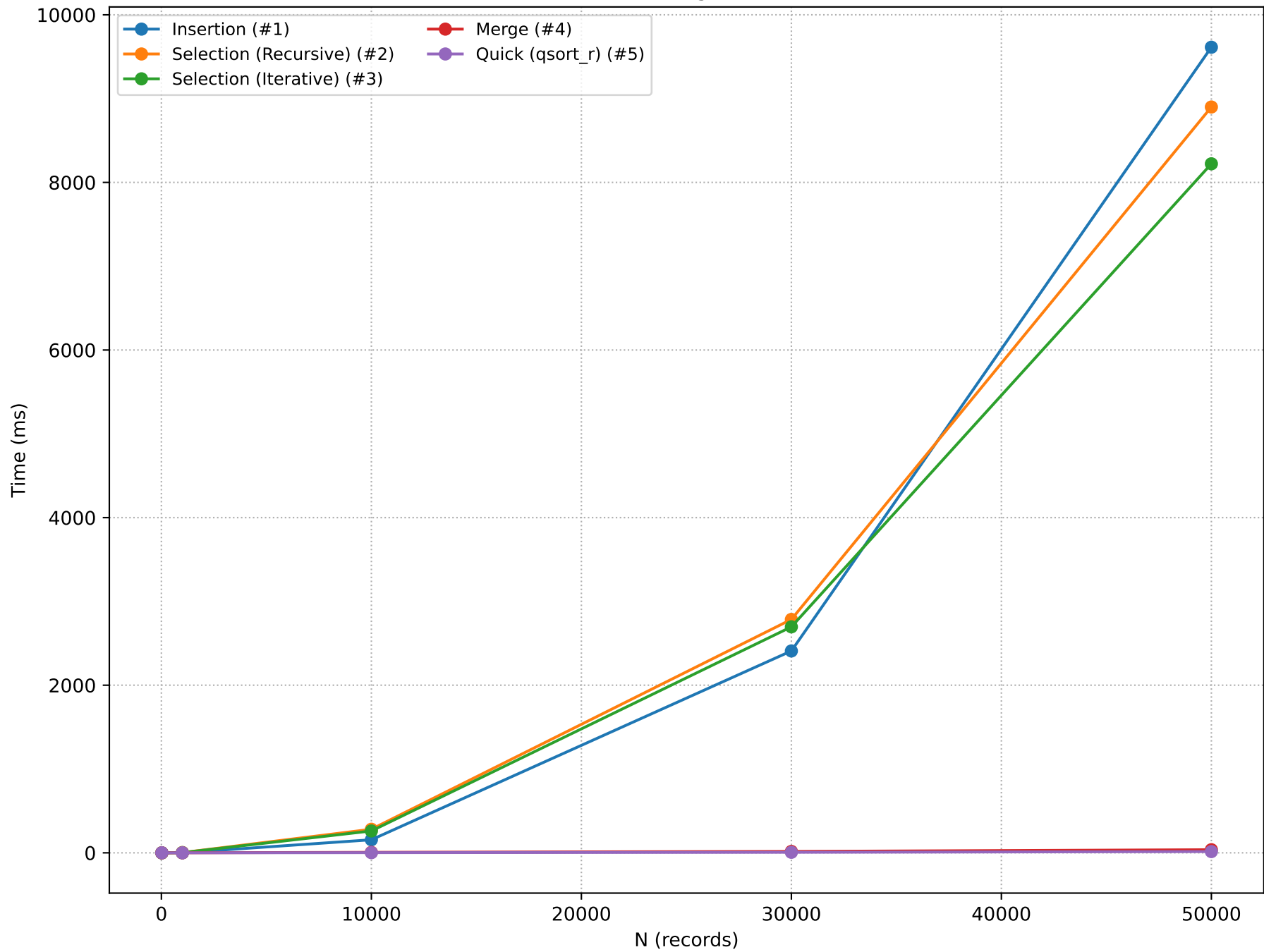
List types: 1

Seeds: 111, 222, 333

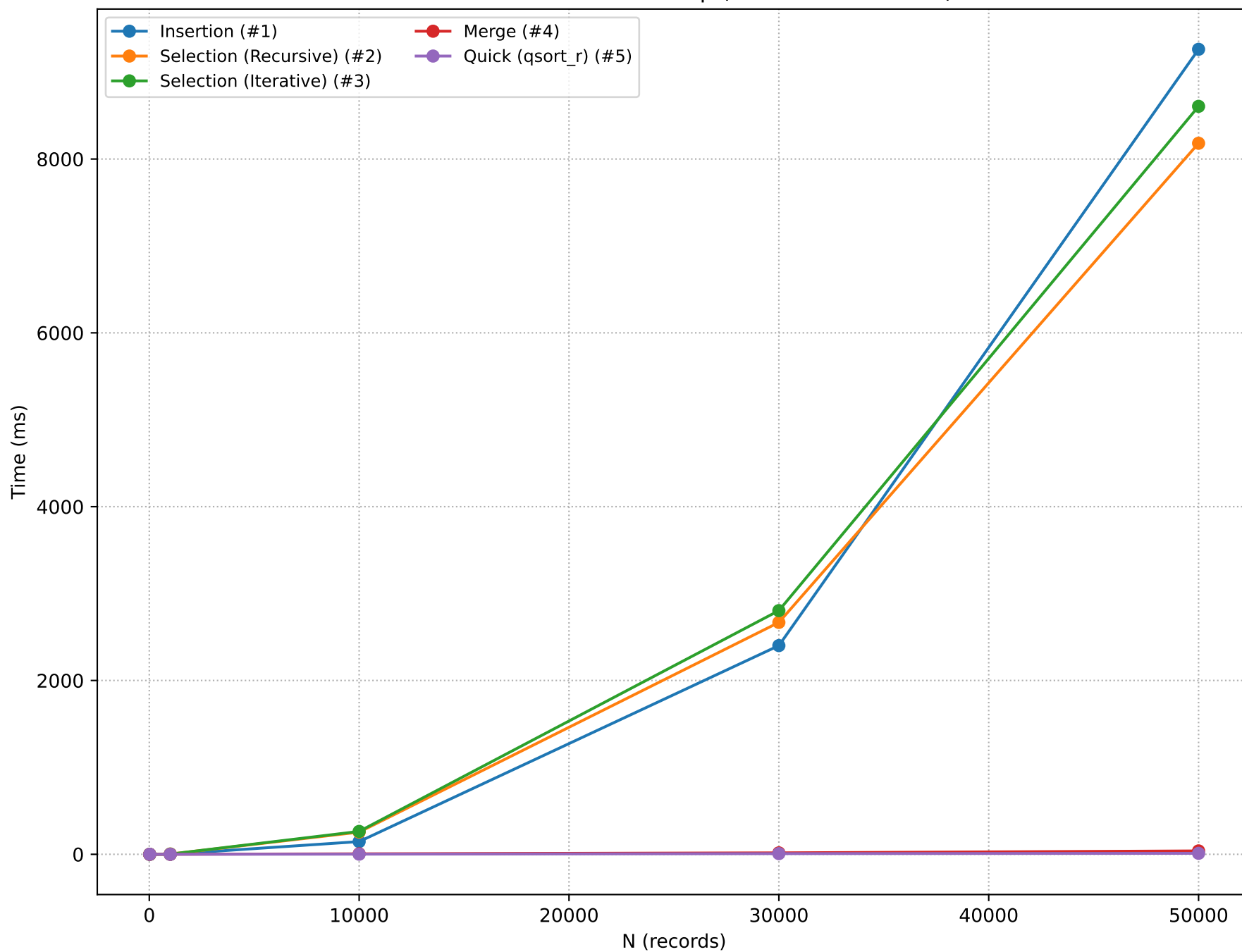
Each timing line from lab3 has format: <N>\t<milliseconds>\t<sort\_type>.

This report aggregates by median over seeds for clarity.

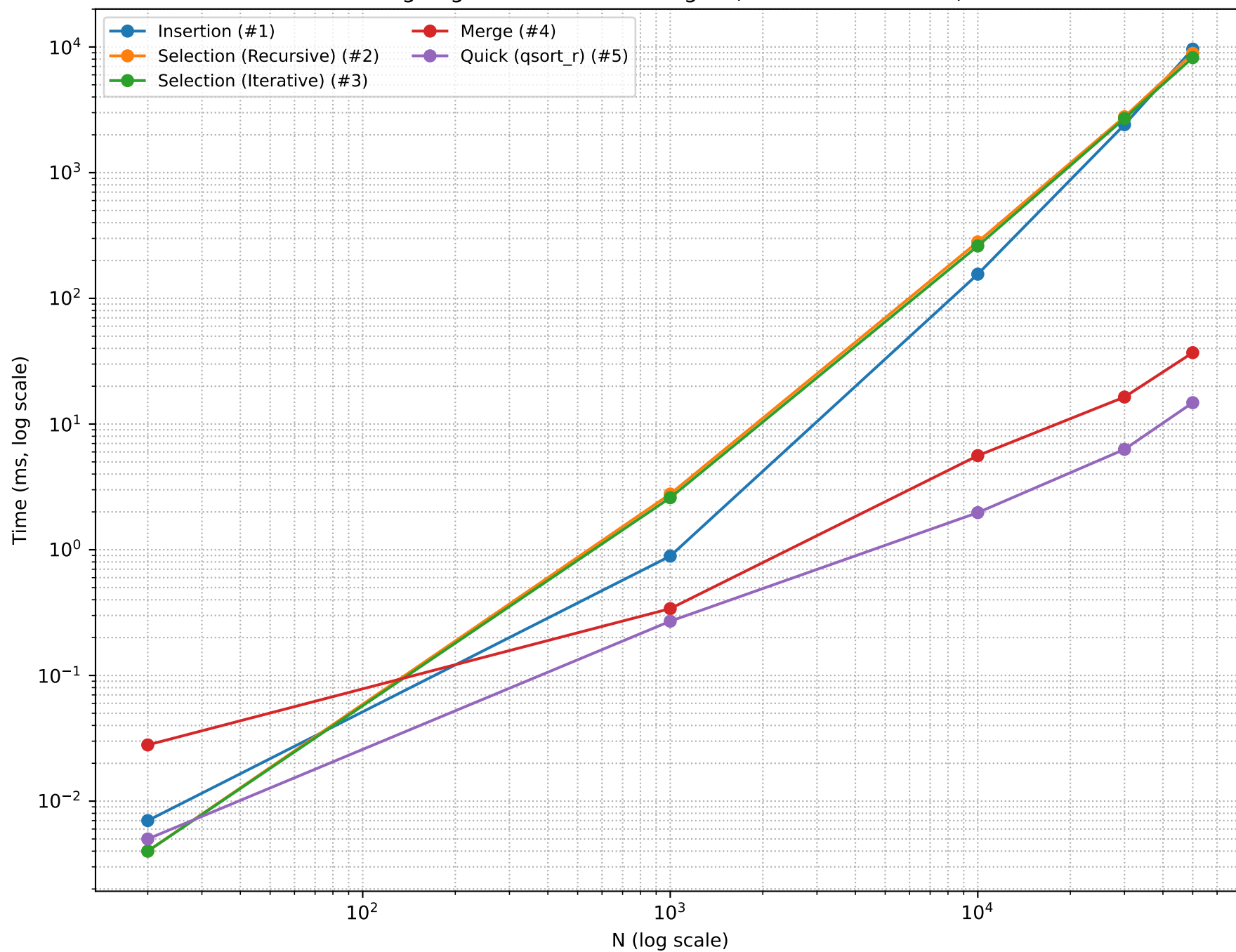
Runtime vs Size — field = gen (median over seeds)



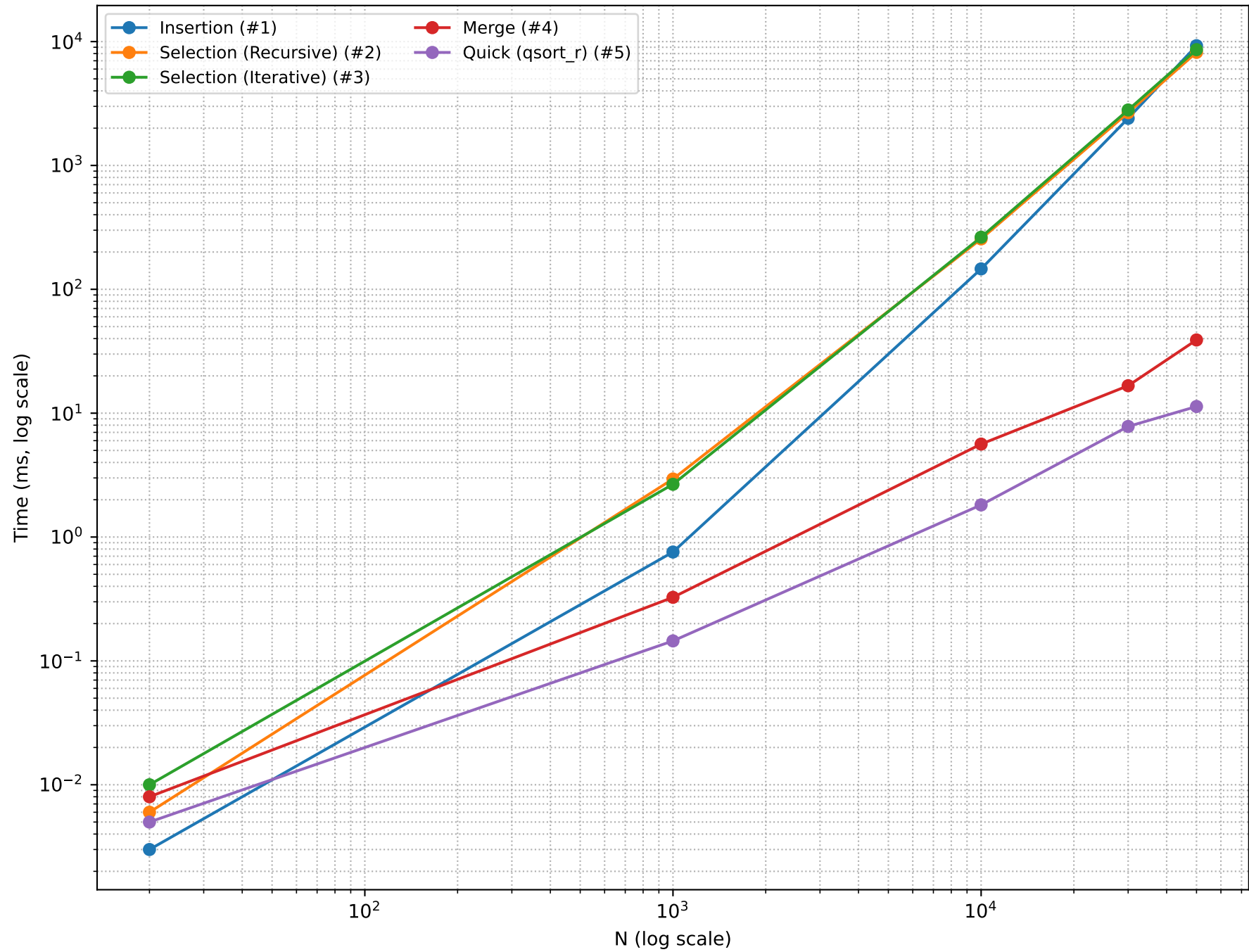
Runtime vs Size — field = ip (median over seeds)



Log-Log Runtime — field = gen (median over seeds)



Log-Log Runtime — field = ip (median over seeds)



Field = gen — Largest N = 50000

Median times at Nmax (smaller is better):

Quick (qsort\_r) (#5): 14.793 ms  
Merge (#4): 36.970 ms  
Selection (Iterative) (#3): 8222.210 ms  
Selection (Recursive) (#2): 8899.944 ms  
Insertion (#1): 9613.271 ms

Speedup vs fastest at Nmax:

Quick (qsort\_r) (#5): 1.00×  
Merge (#4): 2.50×  
Selection (Iterative) (#3): 555.82×  
Selection (Recursive) (#2): 601.63×  
Insertion (#1): 649.85×

Field = ip — Largest N = 50000

Median times at Nmax (smaller is better):

Quick (qsort\_r) (#5): 11.320 ms  
Merge (#4): 39.014 ms  
Selection (Recursive) (#2): 8181.537 ms  
Selection (Iterative) (#3): 8606.214 ms  
Insertion (#1): 9262.528 ms

Speedup vs fastest at Nmax:

Quick (qsort\_r) (#5): 1.00×  
Merge (#4): 3.45×  
Selection (Recursive) (#2): 722.75×  
Selection (Iterative) (#3): 760.27×  
Insertion (#1): 818.24×