Assignment 2

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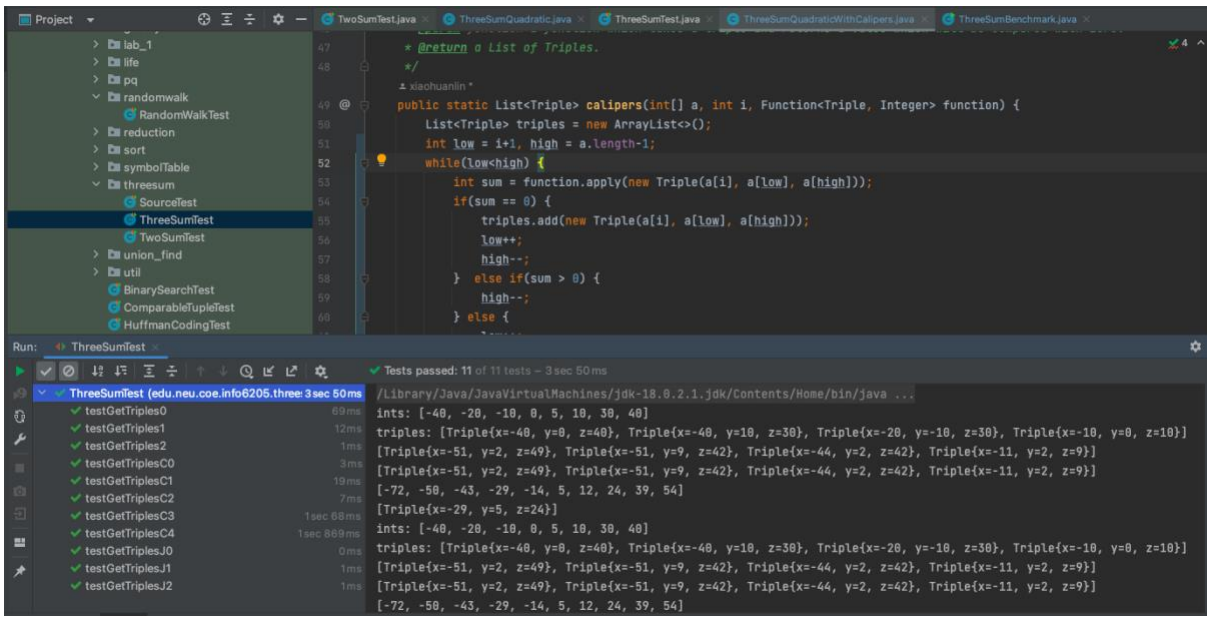
Task: Solve 3-SUM using the Quadrithmic, Quadratic,
and quadraticWithCalipers approaches, as shown in skeleton code in the repository.

Unit Test Cases Success



Benchmarking

N	N3 Raw (in ms)	N2LogN Raw (in ms)	N2 Raw (in ms)	N3 Normalised	N2LogN Normalised	N2 Normalised
250	15	5	6	0.96	10.04	96
500	84	7	5	0.67	3.12	20.00
1000	695	32	17	0.7	3.21	17.0
2000	5492	124	52	0.69	2.83	13.0
4000	41737	585	331	0.65	3.06	20.69
8000		2591	1389		3.12	21.70
16000		11417	6246		3.19	24.40

Why quadratic method(s) perform better?

The N2 methods run much faster than the N3 methods because the number of iterations is reduced by a factor of N. As the input size increases, the difference in run times becomes

more evident and drastic. The growth rate of N3 becomes significantly higher than the N2 functions.