

$O(1)$ per add, $O(n)$ per find, using two sum.

lower bound: using $O(n)$ such operations we can solve 3sum.

note. the static version of this problem is called the 3sum-indexing problem, and there are algorithms with $O(n^{2-\frac{\delta}{3}})$ space and $O(n^\delta)$ time per query for any $0 < \delta < 1$ [1].

References

- [1] Tsvi Kopelowitz and Ely Porat. The strong 3sum-indexing conjecture is false. *arXiv preprint arXiv:1907.11206*, 2019.