

1 Min-nie Mouse and Max-xie Mouse

Use or modify a data structure or set of data structures to do the following operations in the provided time. Do this in exactly N space (not $O(N)/2N$):

- insert: $O(\log(N))$
- getSmallest: $O(1)$
- getLargest: $O(1)$
- deleteSmallest: $O(\log(N))$
- deleteLargest: $O(\log(N))$