Range Counting

Count (or enumerate) objects in a given range (many times)
USE ARRAY: \( O(\log n) \) to place \( L, R \) to count.
\( O(k + \log n) \) to enumerate/report.

but this is not dynamic \[ insert/delete \text{ data}: O(n) \]
Store size of each subtree
$O(\log n)$ nodes visited

- 2 paths root→leaf
- 1 neighbor off path per node

〇: "inside"
×: "outside"
Can we update subtree sizes when inserting/deleting data?

Use a RB tree

when are subtree sizes affected? Rotations