Wilber's second lower bound [SICOMP 1989]

6.897
L 4.1
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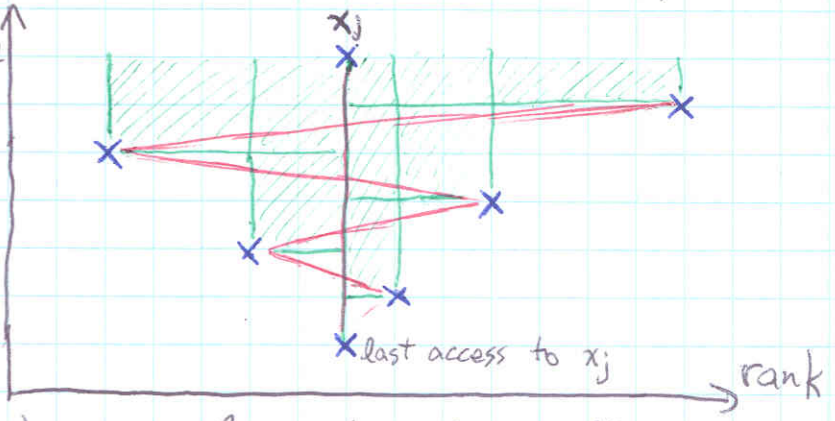
- wilber(x_j):
  - look at where x_j fits among $x_{j-1}, x_{j-2}, \ldots$ back until previous access to x_j
  - say $a_i < x_j < b_i$ is the tightest pair
  - as i decreases, consider more x's, so bounds tighten: a_i increases & b_i decreases
  - wilber(x_j) = # alternations between a_i increasing & b_i decreasing

- geometric view:
  - empty quadrants



- wilber(x) $= \sum_{j=1}^{m}$ wilber(x_j) is a lower bound on all BSTs for x