Last time derived that

\[ h \leq \log_t \left( \frac{n+1}{2} \right) \approx \log_t n = \frac{\log_2 n}{\log_2 t} \]
Cost for Search

\[ O\left(\log_t n \cdot \log_2 (2t-1)\right) = O(\log n) \]
B-tree Deletion

① Like binary search tree deletion, if removing an element in an internal node, you instead remove its successor and replace it by the successor.

② If your path to element to delete (or its successor) if you encounter a minimum-sized node you need to fix that so it's not minimum sized.
Merge

during remove

to visit

next node

merge

neighboring sibling
What if neighboring sibling is not min sized?

Node we want to go to next

goto here
B+ tree

$t = 2$ For letters “abstraction”

just for navigation

all elements in leaves & they are linked together in a doubly-linked chain
Tagged Bucket Collection Interface

Tagged Bucket Collection Wrapper Class inside there's a tagged collection to
Skiplist

head ← 5 ← 7 ← 8 ← 12 ← 18 ← 19 ← 25 ← tail

head ← 20

tower