

Heaps

Heap has root either < || > all children.

10,6,8,2,5,7,4,1, read in rows, 10-root,6/8 is next row, right to left

When replace node, always pick the bottom rightmost. Then heapify(look for c</>p)

Topo sort = inverse of pop

Hashing

map a file size n into a table size m use $f(n)$

Open Hashing: Each Cell is a header of linked list of all keys assigned to it

Closed Hashing: One key per cell.

In case of collision, either linear probing (find next available free cell) or Double Hashing

Key Comparisons = depth of keys

AVG number = $\sum 1/n(\text{depth})$

String Matching

String Matching: Horspool: create a shift table with contains values for how far to shift if a match is found. Always start from the right. EX for BARBER

B=2,A=4,R=3,B=2,E=1, ELSE 6

Beyer Moore: Same, but also create a table for the substring matches

Facts

Insertion Sort: Compare items sequentially

Topo sort is DFS, record PopPush

MergeSort $O(n \log n)$ QuickSort $O(n^2)$

Tree Traversal: Preorder:

Ro,L,R|Inorder:L,Ro,R|Post:L,R,Ro

AVL Tree cannot have a height difference > 1



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