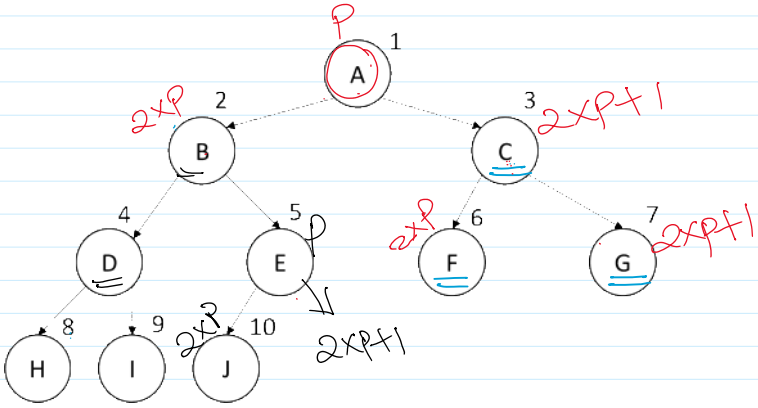
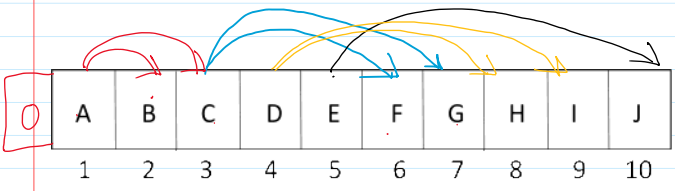
03 July 2024 15:08

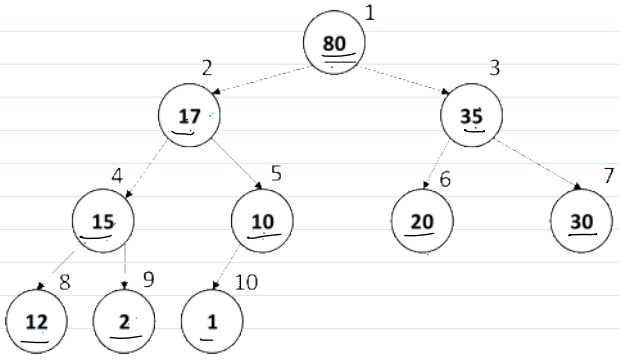




- Almost complete binary tree (of Level d)
  - All leaf nodes must be at level d or d-1.
  - All leaf nodes at level d must aligned as left as possible.
- Heap is array implementation of almost complete binary tree.
- Parent child relation is maintained through index calculations
  - parent index = ~~child index~~ / 2
  - ~~left~~ child index = ~~parent index~~ * 2
  - ~~right child~~ index = ~~parent~~ index * 2 + 1

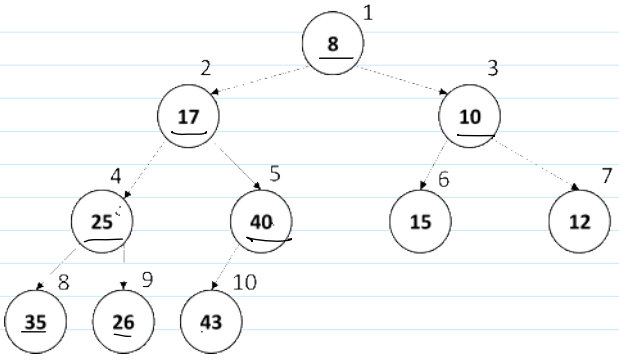
Heap Data Structures : Data is stored in an array, which can be accessed in a parent-child form using some simple formulas.

Max Heap



- Max heap is a heap data structure in which each node is greater than both of its child nodes.

Min Heap



- Min heap is a heap data structure in which each node is smaller than both of its child nodes.