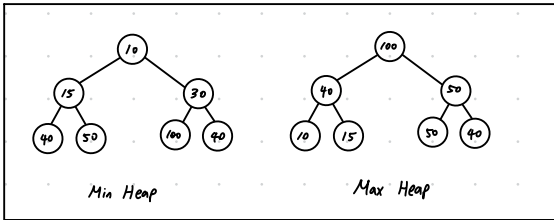# Heap Data Structure

· A Heap is a special Tree-based data structure in which the tree is a completely binary tree

Operations of Heap Data Structure:

① Heapify : A process of creating a heap from an array

② Insertion: Process to insert an element in existing heap time. Complexity: $O(\log N)$

③ Deletion: Deleting the top element of the heap or the highest priority element, and then organizing the heap and returning the element w/ time Complexity $O(\log N)$

④ Peek : to check or find the first (or top) element of the heap.

Min Heap   Max Heap

Max-Heap: the key present at the root node must be greatest among the keys present at all of its children

Min-Heap : the key present at the root node must be minimum among the keys present at all of its children