

### Stack:

1. Middle get and delete
2. Parenthesis check ( $\{\}$ ) [ $()$ ]
3. Evaluate postfix
4. Nearest smaller/greater
5. GetMin
6. Implement Queue using Stack

### Binary Tree:

1. Postfix/prefix/infix
2. How to construct Tree from postfix+infix / prefix+infix
3. Check perfect / balance / complete / full binary
4. Check Two Tree are same
5. Symmetric
6. Weird Traversals (Boundary Value)
7. Leaf Sum #leaf check

### Binary Search Tree:

1. Check BST
2. Count numbers in a range
3. Closest element in bst
4. Dead end
5. Pre->post
6. Kth smallest/largest

### Heap:

1. Maintain median
2. Top K frequent element
3. Sum of all elements between K1th to K2th
4. Convert Max -> Min
5. Check from level order traversal of binary tree
6. Delete anywhere
7. Kth Smallest and Kth largest (running)

### Hashing:

1. Hash functions. Load factor( $\alpha$ ) =  $N / \text{len}(\text{hash\_table})$  [ $N$  = number of element, we want insert]
2. Determine whether an array is subset of another array
3. Find intersection -> insert all values of array 1 in the hash table. Search for all value of array 2

4. Find first repeating character
5. Find missing element in a range
6. Number of distinct substring
7. Find all pair with given sum

Graph:

1. Checking Edge existence  $[u] \rightarrow \text{search}(v) \text{ adj}[u][v]$
2. Changing weight  $[u] \rightarrow \text{search}(v) \rightarrow \text{changeweight}$
3. Calculating degree / weight sum
4. Simulations/ drawing graphs
5. Graph classifications (directed, undirected, weighted, unweighted, dense, sparse, connected, disconnected)
6. Path  $(u \rightarrow v)$