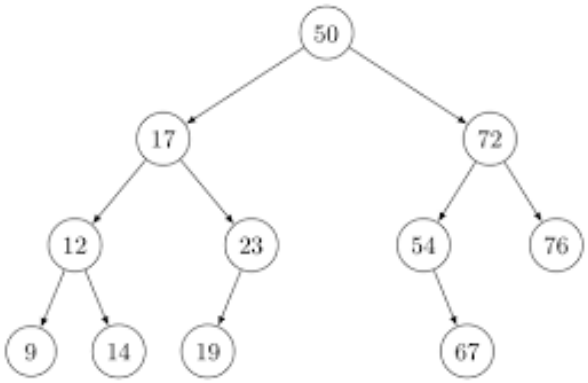
Assignment 5

BST [Array Implementation]

1. Write an ADT for BST using arrays. You must implement following functions recursively.

- Insert
- Remove
- Search
- Get Height of a Node
- Min
- Max
- Traversal (in-order, pre-order, post-order)

The data of the following tree can be mapped on an array using the given formulas.



Parent(r) =⌊(r−1)/2⌋ if r≠0.
Left child(r) =2r+1 if 2r+1<n.
Right child(r) =2r+2 if 2r+2<n.
Left sibling(r) =r−1 if r is even and r≠0.
Right sibling(r) =r+1 if r is odd and r+1<n.
***** **r** is the index of any node.
***** Root will always be placed at **0** index.

Index	0	1	2	3	4	5	6	7	8	9	10	11	12	…
BST Data	50	17	72	12	23	54	76	9	14	19			67	