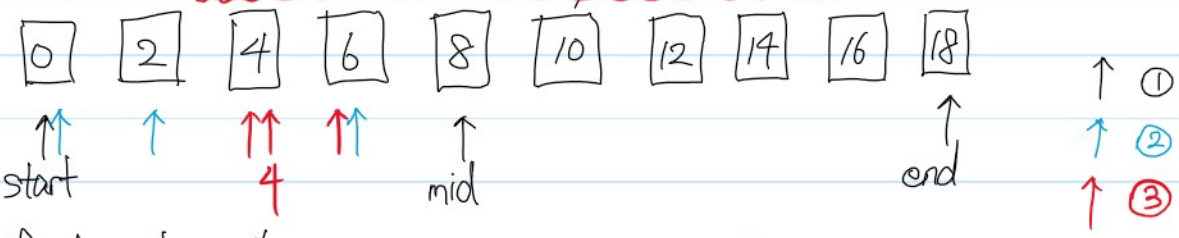
Chapter 7 - Binary Search

2021년 1월 13일 수요일 오후 10:39

* Sequential Search (순차 탐색) : "맨 처음부터 전수 검사"
  - Time Complexity : O(N)
* Binary Search (이진 탐색) : "갈수록 반으로 줄여가기!"
  ※ Data should be already sorted!

ex)



if target = 4.

※ start, end, mid : index!

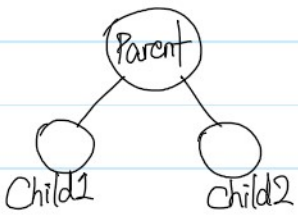
$$mid = \left\lfloor \frac{start + end}{2} \right\rfloor$$

- Time Complexity : O(logN)

※ Recursive 하게 구현

⇒ 종료조건 [start = end → return mid;
start > end → return -1;
↳ target is not in data set

* Binary Search Tree (이진탐색 트리) - BST

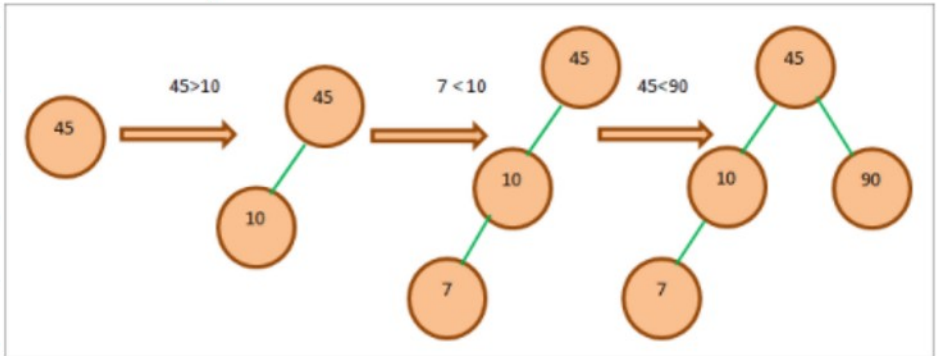


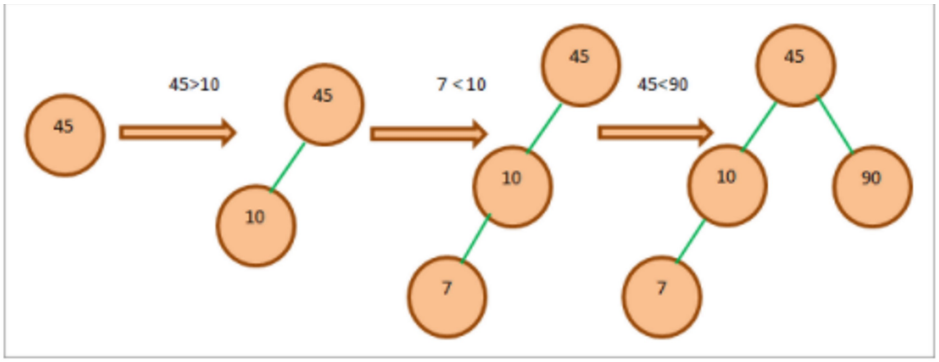
Child1 ≤ Parent ≤ Child2
(everywhere?)

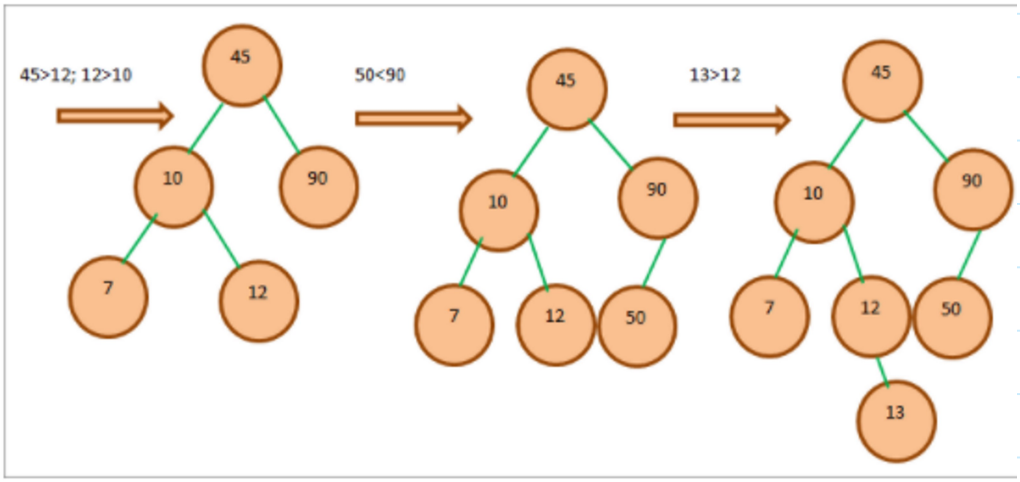
- How is it implemented?

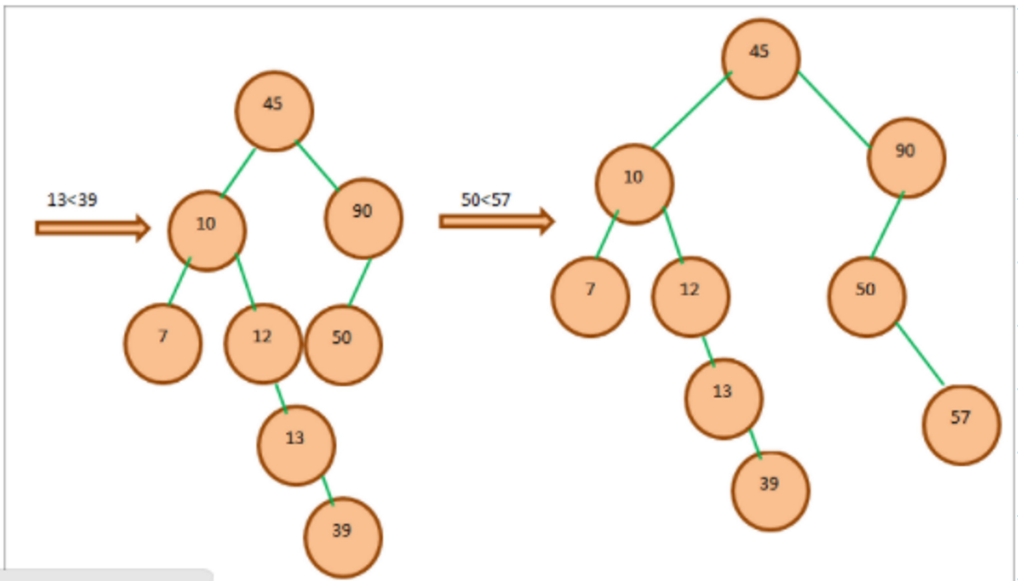
Let's put this array into a BST

{45, 10, 7, 90, 12, 50, 13, 39, 57}









※ 자세한 사항(src code)은 코드 참조 (BinarySearchTree.java)

* Fast Input (p.196)
scanner.nextLine() 보다 더 빠른
BufferedReader 사용하기 (data 개수가 1000단계 이상이면?)
입력받는

References: https://www.softwaretestinghelp.com/binary-search-tree-in-java/