

if(!root) return null;  
let stack = [], newRoot = null, newTree = null;



newRoot === null

newTree === null

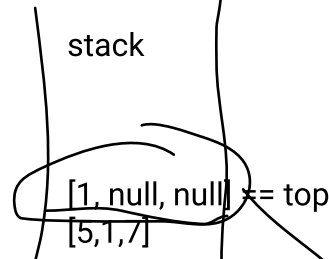
```
//1st while loop  
while(root){ //root === [5, 1, 7]  
  stack.push(root); // [5, 1, 7]  
  //stack === [5, 1, 7]  
  console.log('root.left', root.left) // [1]  
  root = root.left; // root = [1]  
  console.log('stack', stack)  
  // [5, 1, 7]  
}
```

outer while loop( has 1st and 2nd while loops)

**first while loop 1st iteration**  
root === [5, 1, 7]  
stack.push(root)  
  
root = root.left  
root === [1, null, null]

**first while loop 2nd iteration**  
root === [1, null, null]  
stack.push(root)  
  
root = root.left  
root === null

**2nd while LOOP - 1st iteration**



stack.length == 2

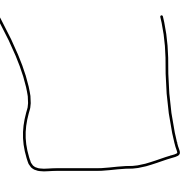
Pop

node === [1, null, null]

newRoot === [1, null, null]

newTree === [1, null, null]

node = [1, null, null]



stack = []

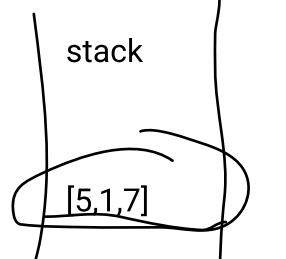
newRoot === [1, null, null]

newTree === [1, null, null]

node = [1, null, null]

```
2nd while loop  
while(stack.length > 0){  
  let node = stack.pop()  
  
  if(!newRoot){  
    newRoot = newTree = node;  
  } else {  
    newTree.right = node;  
    newTree = newTree.right;  
  }  
  node.left = null;  
  
  // right  
  if(node.right){  
    break;  
  }  
}
```

**2nd while LOOP - 2nd iteration**



stack.length == 1

Pop

node === [5, 1, 7]

newRoot isn't empty newRoot === [1, null, null]

newTree.right = node // newTree.right = [5, 1, 7]  
newTree = newTree.right // newTree = [5, 1, 7]  
node.left = null  
node = [5, null, 7]



stack = []

newRoot === [1, null, null]

newTree === [5, 1, 7]

node = [5, null, 7]

```
2nd while loop  
while(stack.length > 0){  
  let node = stack.pop()  
  
  if(!newRoot){  
    newRoot = newTree = node;  
  } else {  
    newTree.right = node;  
    newTree = newTree.right;  
  }  
  node.left = null;  
  
  // right  
  if(node.right){  
    break;  
  }  
}
```

```
if(node.right){ //node.right === [7]  
  root = node.right;  
  break;  
}
```

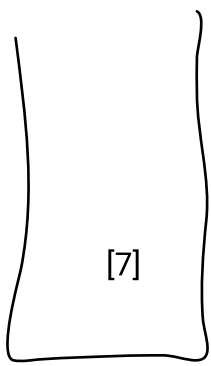
root === [7]

newRoot === [1] or [1, null, null]

newTree === [5, 1, 7]

**first while loop 1st iteration**

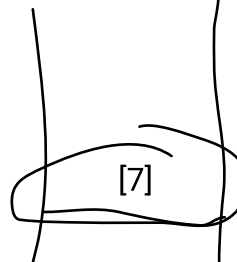
root === [7]  
stack.push(root)  
  
root = root.left  
root === null



while(stack.length > 0){

```
  let node = stack.pop();  
  if(!newRoot){  
    newRoot = newTree = node;  
  } else {  
    newTree.right = node;  
    newTree = newTree.right;  
  }  
  node.left = null;
```

**2nd while LOOP - 1st iteration**



stack.length == 1

Pop

node === [7]

newRoot === [1] or [1, null, null]

newTree === [5, 1, 7]

newTree.right === [7]

newRoot === [1] or [1, null, null]

newTree = [7]

newTree = newTree.right  
newTree = [7]

node.left === null  
node === [7, null, null]

```
if(node.right){ //node.right === null  
  root = node.right;  
  break;  
}
```

