Objectives for 11/10/2017 (Fri)

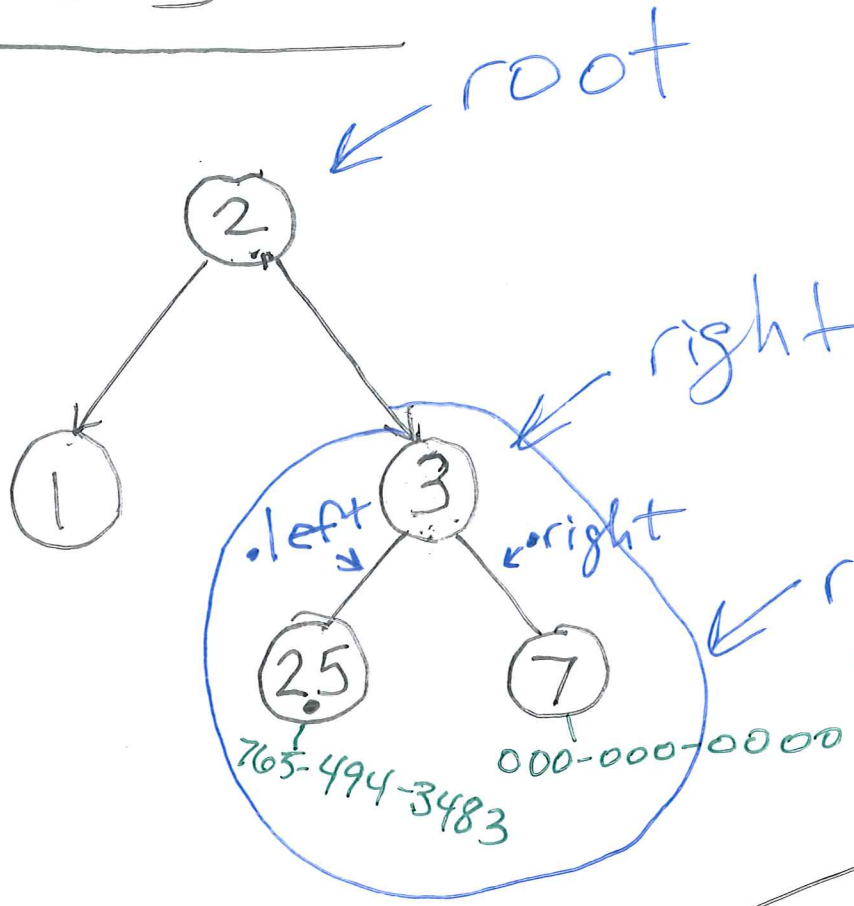
- Trees
  - Terminology
    - root, child, subtree, …
  - Types of trees
    - binary tree, binary search tree (BST), n-ary tree (any # of children)
  - Operations
    - _create_node(), insert(), …
    - We also covered how to use an initializer expression to specify fields for a tree node on the heap.

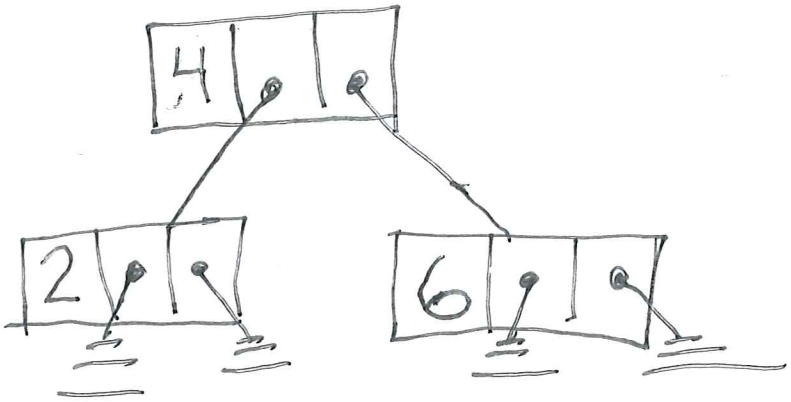
```
TreeNode temp_node = {
    .value=…,
    .left=…,
    .right=…
};
TreeNode* new_node = malloc(sizeof(*new_node));
*new_node = temp_node;
```

This sheet was written restrospectively when the notes were posted.

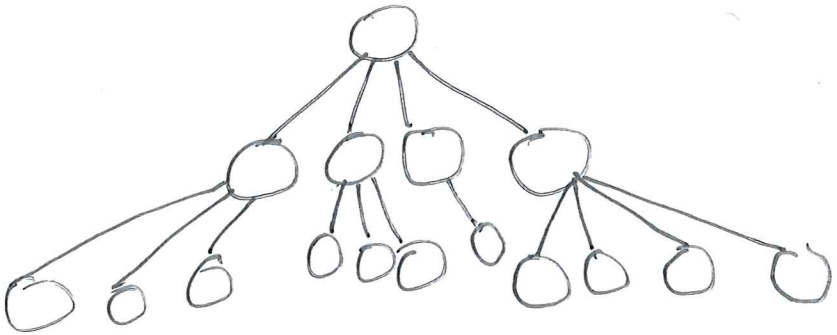
Trees

These are binary search trees





Trees in general

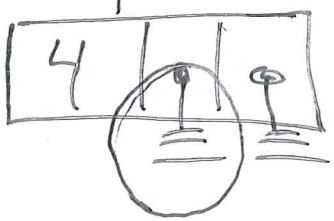


empty tree

root

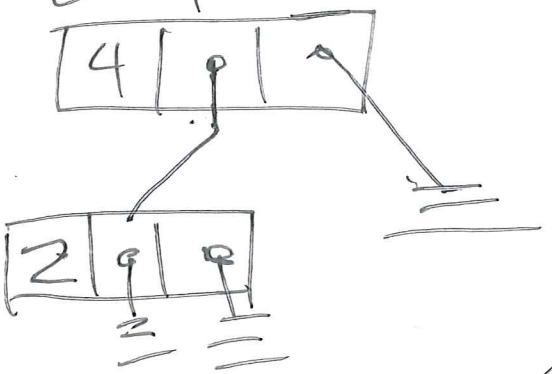
insert(..., 4)

root

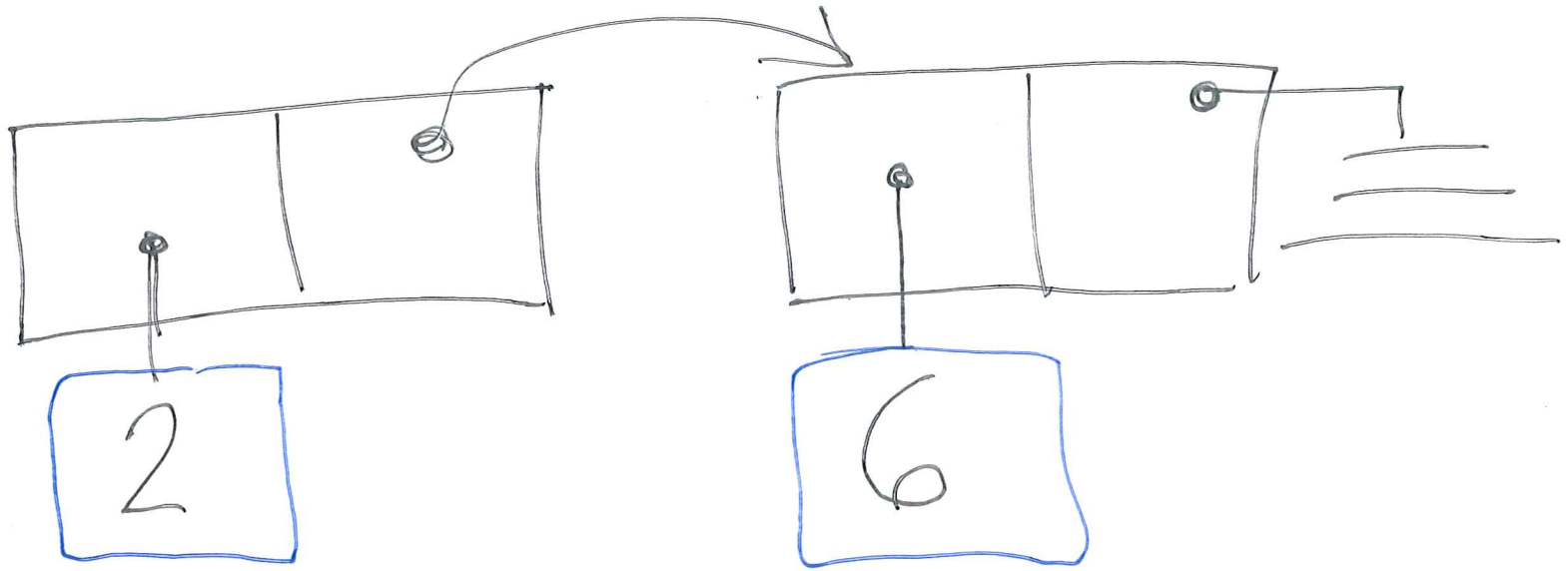


insert(..., 2)

root



Note about HW12



If value refers to stack memory, then destroy-fn is empty

```
destroy(...) {
}
```

Otherwise, if frees heap memory.