Maps

A hash table is not the only associative array. It is also possible to use any data structure for which Find is "Fast"

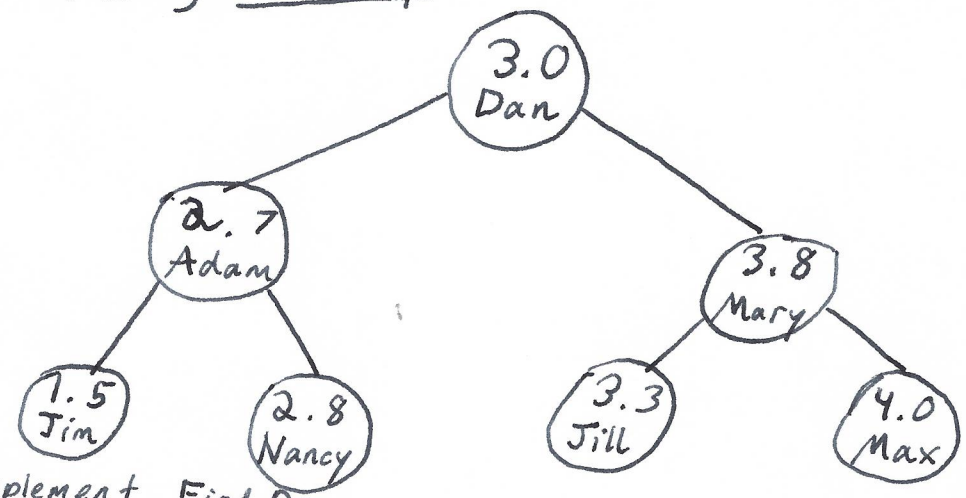
For example sorted arrays and AVL trees allow for "Find" in O lgN

There are two use-cases where we may prefer AVL tree over Hash Table for associative array

#1 we do not wish to implement a hash function (i.e. C++ "map")

#2 we wish to find elements around a range of values

For example, if we wish to find all students with GPA between 3.5 and 3.75 in the following AVL map



We can implement FindRange recursively:

```
FindRange (curr, min, max)
{
    if (curr == Null)
        return
    if (curr.key > min)
        FindRange (curr->L, min, max)
    if (min < curr.key < max)
        print curr.val
    if (curr.key < max)
        FindRange (curr->R, min, max)
}
```

FindRange is similar to an in-order traversal but with bounds checking