UpTree + Path Compression:

A Review of Data Structures
- Array
- Sorted Array
- Unsorted Array
- Stacks
- Queues
- Hashing
- Heaps
- Priority Queues
- UpTrees
- Disjoint Sets

List
- Doubly Linked List
- Skip List
- Trees
- BTree
- Binary Tree
- Huffman Encoding
- kd-Tree
- AVL Tree

An Introduction to Graphs

DisjointSets.cpp (partial)

```cpp
int DisjointSets::find(int i) {
    if ( arr_[i] < 0 ) { return i; }
    else { return find( arr_[i] ); }
}
```

```cpp
void DisjointSets::unionBySize(int root1, int root2) {
    int newSize = arr_[root1] + arr_[root2];
    // If arr_[root1] is less than (more negative), it is the larger
    // set; we union the smaller set, root2, with root1.
    if ( arr_[root1] < arr_[root2] ) {
        arr_[root2] = root1;
        arr_[root1] = newSize;
    }
    // Otherwise, do the opposite:
    else {
        arr_[root1] = root2;
        arr_[root2] = newSize;
    }
}
```
CS 225 – Things To Be Doing:

1. Exam #10 (programming) is ongoing
2. MP6 due Friday, Nov. 17 (Friday before break starts)
3. lab_dict released Wednesday; due Wed. Nov. 29 @ 7pm
4. Daily POTDs