CS206:Spring 2019

Lab 8

1. Download `LabBinaryTree.java` and `LabPriorityQueue.java` from `~dxu/handouts/labs/08`. These are the interfaces that we will use in lab. They are similiar to those you saw in class, but simplified.

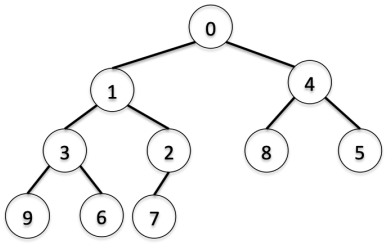
2. Implement `ArrayBinaryTree` that implements `LabBinaryTree`. Start with the methods `size`, `isEmpty`, `insert` and `toStringBreadthFirst`, which prints out the elements of the binary tree in breadth first traversal order.

3. Test your methods by creating a `ArrayBinaryTree<Integer>` object in a driver class, and insert the integers 1-20 into the tree.

4. Proceed with implementing and testing `getRootElement` and `remove`.

5. Implement `ArrayHeap` that extends `ArrayBinaryTree` and implements `LabPriorityQueue`. Start with overriding `insert` so that elements can be inserted in heap order.

6. Test by inserting the integers 9 down to 0 into the heap. If all goes well, your heap should look like this:



7. Proceed with implementing and testing `peek()`