Before Class:
- Journal Up

1. Binomial Trees
   - The binomial tree of height $h$ is a tree obtained from two binomial trees of height $h - 1$ by linking the root of one to the root of the other.
   - Order matters
   - Diagrams
   - How many binomial trees of height $h$ are there?
   - Number of nodes on each level
   - Fill in table
   - How to implement this?

2. Binomial Heaps
   - Can we use a single binomial tree as a heap? What if $n$ is not a power of 2?
   - A binomial heap is a collection of binomial trees that each obey the min-heap property. For any non-negative integer $k$, there is at most one binomial tree with a height of $k$ ($B_k$).
   - Is each one a heap?
   - What is the maximum number of trees?
   - What is the height of the maximum tree?
   - Examples
   - Which trees are present? ($n$ base 2)
   - Minimum Operation
   - Merge Operation (destroys old ones)
   - Insert Operation
   - What does this give us over a regular heap?
   - What part of this is worse than a regular heap?

3. Fibonacci Heaps
   - Collection of heap-ordered trees. Ideally, we’d like binomial trees, but that will decrease our efficiency.
   - Discuss times given in table.
   - Show implementation
   - Simple ops: makeHeap, minimum, merge
   - Insert operation
   - DeleteMin operation

Next Class:
- Randomized Algorithms - finally getting into it
- Hand Back Midterms
- Evaluations!