FIT3155: Lab questions for week 6

Objectives: Concepts from weeks 3-5

1. If you have any lab exercises still pending from previous weeks' lab, complete them.

2. The lowest common ancestor of two nodes x and y in a rooted tree T is defined as the node w of **greatest depth** from the root in T that is an ancestor of both x and y. Using a **disjoint set data structure**, Robert Tarjan introduced an (offline) algorithm that identifies, for *every* pair of nodes x and y in T, their lowest common ancestor. Refer this wiki page if you need some 'inspiration' to start reasoning about the algorithm.

3. Begin constructing the binomial heap data structure – the week05 lecture covered the 'merge' and 'extract-min' operations, so implement these.

4. Recall heapsort from FIT2004? To recall the details, reimplement in-place heapsort using the binary heap implementation. Next week you will redo this implementation using binomial and Fibonacci heaps.

```
-=0=-
 END
-=0=-
```