MA/CSSE 473 Day 37 Announcements and Summary

Announcements:

1. **HW 14** due tomorrow. **No late days allowed for this assignment**. On Friday, I removed several problems.
2. **HW 15 and 16.** Canceled
3. **Tomorrow:** Return Exam 2, Final Exam top.ics list, and a little bit of computational complexity.
4. **Thursday:** Optional final exam prep Problem Session; work together on problems that students have questions about.
5. **Friday:** No class meeting.
6. **Please complete the course evaluation** on Banner web. If at least 45 (out of 49) students complete it, everyone gets an extra 5% credit on the final exam. I can never see ***who*** submits the eval; but I can see ***how many***.
7. **Final Exam** Monday Nov 17 at 6:00 PM.
   - Schedule lookup page currently says everyone is supposed to be in O259.
   - I wrote to registrar to request a larger room (or two rooms).
8. **In my office today:** hours 5-8. Tuesday 1, 6, 8. Wednesday 3-8 (most likely)

makeset (1)
makeset (2)
makeset (3)
makeset (4)
makeset (5)
makeset (6)
union(4, 6)
union (1,3)
union(4, 5)
findset(2)
findset(5)

Main ideas from today: Kruskal details, disjoint set datatype.

1. What are the operations for the Disjoint Set datatype?

   a.

   b.

   c.

2. Outline Kruskal's algorithm in terms of the disjoint set ADT.

3. Based on the high-level code, what can we say about efficiency of Kruskal algorithm (in terms of n= |V| and m= |E|)?

4. What is the simple representation we can use for a DisjointSet datatype?

5. (4) Using the above representation, write

   makeset(i):

   findset(i):

   mergetrees(i,j):

   union(i, j):

6. Suppose we always make shorter trees subtrees of taller trees.

   Write new versions of `makeset` and `mergetrees`

7. Show that the max height of a k-node tree is $\lfloor \lg k \rfloor$.