CS 163L Lab Plan for Data Structures
Spring 2015

- Bring a Laptop, Netbook or Tablet – or reserve one 24 hours in advance from karlaf@pdx.edu
- Bring your lab manual (PSU Book Store) and make sure to complete the Pre-Lab exercises! They are required to attend.
- Bring your PSU ID (preferably your proximity card)
- Attendance is required! Missing more than one lab will require students to makeup the lab as authorized by your instructor. These must be made up within 1-2 weeks.
- Lab work is to be completed to pass CS163. Only one lab may be missed without making it up.
- Lab work is Pass/No Pass
- *All work will be performed this term in CS **linux, using ssh, putty or terminal**.*
- *Lab code is pre-compiled for specific platforms and will only work on CS linux.*
- *Editors may be: **vi, vim, emacs** (no others)*

1. **Week #1 - Lab #1 – Getting Started with Abstract Data Types** **Get a CS Account**
   - **No Prelab Exercises for the first lab!**
   - **Practicing Linear Linked Lists**
   - *Building a Journal ADT*

2. **Week #2 - Lab #2 – Building an Ordered List Abstract Data Type**
   - Bring your Pre-Lab exercise completed!
   - *Implement an Ordered List ADT*
   - *Experience variations of linear linked lists*

3. **Week #3 - Lab #3 – Building Stack and Queue ADTs**
   - Bring your Pre-Lab exercise completed!
   - *Implement Stack abstraction*
   - *Implementation of a LLL of arrays*

4. **Week #4 - Lab #4 – Building Stack and Queue ADTs**
   - Bring your Pre-Lab exercise completed!
   - *Implement Queue abstraction*
   - *Implementation of a Circular Linked List*

5. **Week #5 - Lab #5 - Practice Recursion**
   - Bring your Pre-Lab exercise completed!
   - *Practice recursive solutions*

6. **Week #6 - Lab #6 – Hash Tables and Other Linked Lists**
    - Bring your Pre-Lab exercise completed!
    - *Implement Array of Linked Lists*
    - *Experience variations of linear linked lists*

7. **Week #7 - Lab #7 – Binary Search Trees**
    - Bring your Pre-Lab exercise completed!
    - *Practice BST solutions*

8. **Week #8** - **Lab #8 – Balanced Trees**
    - Bring your Pre-Lab exercise completed!
    - *Practice 2-3 Tree Solutions*

9. **Week #9 - Lab #9 – Advanced Algorithms**
    - Bring your Pre-Lab exercise completed!
    - *Experience Graph algorithms*

10. **Week #10 - LAB #10 – Experience Advanced Trees and Practice Recursion**
    - Bring your Pre-Lab exercise completed!
    - *Practice binary search trees and 2-3-4 trees with recursion*