

**Homework Midterm Week****Instructions**

1. Please review the grading policy outlined in the course information page.
2. You must also write down with whom you worked on the assignment. If this changes from problem to problem, then you should write down this information separately with each problem.
3. Problem numbers (like Exercise 3.1-1) are corresponding to CLRS 3<sup>rd</sup> edition. While the 2<sup>nd</sup> edition has similar problems with similar numbers, the actual exercises and their solutions are different, so make sure you are using the 3<sup>rd</sup> edition.

**Problems**

1. (30 pts, **Mandatory**) Write up a two page summary of all concepts and techniques in CLRS Chapter 10.
2. (10 pts) Exercise 10.1-1.
3. (10 pts) Exercise 10.1-4.
4. (10 pts) Exercise 10.1-6.
5. (10 pts) Exercise 10.1-7.
6. (10 pts) Exercise 10.2-2.
7. (10 pts) Exercise 10.2-6.
8. (10 pts) Exercise 10.4-2.
9. (10 pts) Problem 10-1.
10. (Extra Credit) Problem 10-2.
11. (30 pts, **Mandatory**) Write up a two page summary of all concepts and techniques in CLRS Chapter 12.
12. (40 points) Code a Binary Search Tree structure on your own, using your favorite programming language. You should implement the following procedures to work on the tree structure: Min, Max, PrintSubtree(node), Successor(node), Predecessor(node), Insert(value), Delete (node). You are not allowed to use any existing/builtin datastructure in the programming language that implements trees.

For this problem, do not submit anything: Your code will be modified for module 9 assignment and then demoed during tutoring hours during *November 4 - 22* three weeks period. The TAs will have some examples to run.