CSCI 48400
Assignment 1

Due Monday 8/29/2016

For this assignment (and for many to follow) there are three types of problems.
I. Problems from the Linz textbook that are pencil-and-paper problems (i.e., hand in on paper).
II. Problems from the Linz textbook that can be worked using JFLAP (i.e., turn in the JFLAP files on Canvas/Assignments).
III. Problems from the JFLAP Activities.pdf that can be worked using JFLAP (may or may not require JFLAP files to turn in).

In addition, because of the size of this class, we will have a TA to help with the grading. When you turn in your homework on paper, you will need to separate those pages going to me for grading and those going to the TA for grading, with YOUR NAME on both sets of papers. Electronic files he and I can separate.

Save your JFLAP files in the default JFLAP4.jff mode, not as an image file. When you hand in JFLAP files, NAME YOUR FILES WITH THE PROBLEM NUMBER - if we can't tell which problem it's for, we won't grade it. Collect all your JFLAP files into a single zip file and submit it via Canvas/Assignments.

I. Pencil and paper work from the textbook (for instructor)

Section 1.1: #9, 15 [Note that this is an "if and only if" problem, so there are two things to prove]

I. Pencil and paper work from the textbook (for TA)
Section 1.1: #38
Section 1.2 #5, 16

II. Submit JFLAP files for the following problems from the textbook. Along with the JFLAP files, please include one Word document with "snapshots" of all the JFLAP results, clearly labeled by problem number. (You can use PrintScreen, the Snipping Tool under Accessories in Windows, or any other screen capture software you may have.)
To test strings in JFLAP, use Input/Multiple Brute Force Parse, then you can enter multiple input strings and run them all at once, or Brute Force Parse to run a single input at a time. "Accept" means the strings are generated by the grammar, "Reject" means they are not. (The JFLAP Activities.pdf suggests using the CYK parse, but this is unreliable; it sometimes accepts strings that are actually not in the language.)

Section 1.2: #14 b, c 17c (For each problem, create a grammar in JFLAP, test it until you are confident it is correct, then save the grammar file. Put the three .jff

files in a single zip file and submit via Canvas/Assignments along with your Word snapshot file.)

III. Problems from the JFLAP Activities.pdf. Use JFLAP to help you answer these questions, but turn in your conclusions on paper. (<mark>for TA</mark>)

Exercises 2.1 #2 Enter the grammar in JFLAP, test the given strings and maybe some others. Also, try to write (in English) a description of the language.

Exercises 2.1 #6 (If you think a conjecture is true, just say "yes", if not, write down a string(s) that contradicts it)

Exercises 2.1 #7 (Use JFLAP to do some testing; turn in a yes/no answer along with an explanation.)