DUE Monday, 10/10/16

CSCI 48400
Assignment 7

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

Section 7.2

#7 Use the algorithm. Write the transitions. Do not use JFLAP for this as the approach used in JFLAP is somewhat different from that in the textbook.

#16 Use the algorithm. When you have created the grammar, then for the word aba, which is in L, write the sequence of instantaneous descriptions as the (possibly modified) npda accepts this word and write the corresponding derivation in the grammar you constructed. Hint: note conditions 1 and 2 on page 190.

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

Section 7.1 #17

Section 7.2 #4 For the word aaabbbb, show both its leftmost derivation in the given Griebach normal form grammar and the sequence of instantaneous descriptions as the npda accepts this word. (You don't have to do anything for aabb.)

Extra problem (**not extra credit**). Show the derivation of the word aaab in the grammar developed in Example 7.8.

Section 7.3: #1 Draw a deterministic pda for L.
#9

Section 7.4: #5 This is so obvious it is hard to prove. Instead, prove the contrapositive: ambiguous implies not LL(k) for any k.

Reminder: also turn in a Word document with screen snapshots of your Part II and Part III JFLAP solutions.

II. Use JFLAP to solve these problems from the textbook and turn in the JFLAP files (clearly named),

Note that JFLAP uses Z (capital Z) as the bottom of stack symbol, so be sure you use capital Z in your JFLAP transitions when you build an npda or pda. When you start to build a pushdown automaton, JFLAP asks whether you want to allow multiple character or single character input; select multiple character because

you may want to add multiple characters to the stack in one move, but be sure that you follow the Linz definition and read only one input character or stack symbol at a time. Also note that JFLAP allows a move without consuming a stack symbol, not allowed in the Linz definition. When you go to test the machine with input strings, you have a choice of accepting by final state or by empty stack; again, to conform to the Linz definition, choose by final state.

Section 7.1 #6e, g
#16

Section 7.3 #7 (submit a deterministic pda solution and put a note on it – use the Attribute Editor, right-click on the screen, add note – as to why the original solution is nondeterministic)

III. Problems from JFLAP Activities.pdf file, Section 2.6. Turn in the JFLAP file.

#2 Extra credit – 10 points. (You probably need to do extensive testing.)