CS 4810 Homework Assignment 8 due in class Monday, October Oct 22

Your homework will be graded on the neatness of your write up as well as its correctness.

1. Write up how to remove unit productions in a context-free grammar. The left hand side of a unit production consists of a single variable, $A \rightarrow B$. Your write up should be of the quality of material submitted to a journal for publication and will be graded on the quality of exposition and writing.

2. Show that any context-free language can accepted by a pushdown automaton. Your grade will depend on the write up as well as correctness.

3. Show that the set a one state pushdown automaton accepts by empty store is a context-free language.

4. Use the pumping lemma for context-free languages to prove $\{a^m b^m c^n d^n | m \geq n\}$ not context-free.

5. Prove that $\{1010^2 10^3 1 \cdots 10^i 1 | i \geq 1\}$ is not a cfl.