Assignment 4

CSCE 4323: Formal Languages and Computability
Fall 2018

Solutions for each should be provided as code in a text document following the format for a CFG on the web site `http://web.cs.ucdavis.edu/~doty/automata/`. A template file "CSCE4323-F18-HW-template.txt" can be found on the course site on Blackboard.

1 Give a CFG which generates the language $\{xy \mid x, y \in \{0,1\}^*, |x| = |y|, \text{ and } x \neq y^R\}$.

2 Give a CFG which generates the language $\{a^i b^j \mid i \neq j \text{ and } 2i \neq j$.

3 Convert the following CFG to a CFG in Chomsky normal form:
$A \to BAB|B|\epsilon$
$B \to 00|\epsilon$

4 Give a CFG in Chomsky normal form which generates the language $\{w \mid w \in \{a,b\}^*$ and the number of a's in w equals the number of b's in $w\}$.