

CSCI 400 – Programming Language Concepts – Spring 2019
HW 11 – Lexical and Syntax Analysis (40 points)

This assignment is to be turned in through Blackboard.

1. Perform the pairwise disjointness test for the following grammar rules.
 - (a) (5 points) $A \rightarrow aB \mid b \mid cBB$
 - (b) (5 points) $B \rightarrow aB \mid bA \mid aBbW$
 - (c) (5 points) $C \rightarrow aaA \mid b \mid caB$
2. Given the following grammar and the right sentential form, draw a parse tree and show the phrases and simple phrases, as well as the handle.

$$S \rightarrow aAb \mid bBA$$

$$A \rightarrow ab \mid aAB$$

$$B \rightarrow aB \mid b$$

- (a) (5 points) $aaAbb$
 - (b) (5 points) $bBab$
 - (c) (5 points) $aaAbBb$
3. (10 points) Show a complete parse, including the parse stack contents, input string, and action for the string $id * (id + id)$, using the grammar and parse table in Section 4.5.3.