CST 334: Operating Systems

Dr. Glenn Bruns

# Syntax and parsing

**Instructions**. Answer the following problems by editing [syntax.txt](https://drive.google.com/file/d/1FX-JqPG00v7yer4y1ccd2ZwT4WL9kp5G/view?usp=sharing):

1. Here is a BNF grammar:

A ::= **a** A | A **b** | **c**

Can "acb" be derived from this grammar?

1. Can "aac" be derived from the same grammar?
2. Can "aabc" be derived from the same grammar?
3. Can "abac" be derived from the same grammar?
4. Here is another BNF grammar: (as usual, first non-terminal is the start symbol)

stmt ::= **print** ( expr ) | **if** ( expr ) stmt | stmt ; stmt

expr ::= x op 0 | x | y

op ::= < | >

Can "if (x == 0) print(x)" be derived from this grammar?

1. Can "print(x); print(y);" be derived from the same grammar?
2. Can "if (x > 0) if (x < 0) print(x)" be derived from the same grammar?
3. Can "print(y); if (x) print x(> 0)" be derived from the same grammar?
4. Here is another BNF grammar: (as usual, first non-terminal is the start symbol)

A ::= **a** B | **b** B | B A

B ::= **c** A | **d**

Can "abc" be derived from this grammar?

1. Can "cadad" be derived from the same grammar?

**Submitting**. Submit your edited syntax.txt on iLearn.

**Grading.** 2 points/question.