

# COSC 251 – Lab #10

## A little CFG Madness

Purpose: Using all the tools at your disposal to generate random sentences (that make sense!).

Task: Write a program (in a language of your choice) to generate a random sentence. For this, you'll adapt a simple CFG making random choices for terminals in order to generate your random sentence. The CFG:

Non-Terminals: S (sentence), N (noun), V (verb), ADJ (adjective), ADV (adverb), DET (determiner), PRO (pronoun), PREP (preposition), CONJ (conjunction), NP (noun phrase), VP (verb phrase), PP (prepositional phrase).

CFG:

- \* S --> NP VP
- \* N --> BOY | RING | HOBBIT | TROLL | MOON | TELESCOPE
- \* V --> HITS | RUNS | SEES
- \* ADJ --> BIG | RED | HAIRY
- \* ADV --> QUICKLY | QUIETLY
- \* DET --> A | AN | THE | THIS | THAT | EACH | EVERY
- \* PRON --> HE | SHE | IT
- \* PREP --> IN | ON | AROUND | ABOUT
- \* CONJ --> AND | BUT
- \* NP --> DET N | DET N PP | DET ADJLIST N
- \* VP --> V | V NP
- \* PP --> PREP NP
- \* ADJLIST --> ADJ | ADJ ADJLIST

Note that anything in the CFG that is not a non-terminal should be considered a terminal. This lab is adapted from an assignment given at UPenn.

Deliverable: the code that you create. It must be submitted via Digital Dropbox.

**This lab may be worked on in pairs.**

Due: By the start of class Monday. No exceptions. To be turned in via Digital Dropbox.