

CS112 (LFA) - Projects Lab 5

May 2022

Exercise 1. (1p) Create a program-readable format to fully describe a **Context Free Grammar**. Your format should differentiate between terminals, non-terminals, productions and start point.

Implement a library/program in a programming language of your choosing to load and validate a CFG in the format you created.

```
cfg_validation_engine.py cfg_config_file
```

You must also include two additional files along with the script:

- A README file to describe your format
- An example `cfg_config_file` input

Exercise 2. (3p) Implement a library/program in a programming language of your choosing to simplify a CFG using:

- “useless” reduction
- “null” reduction
- “unit” reduction

```
cfg_reduction_engine.py cfg_config_file
```

The above command should print the resulted CFG in the same format as the input.