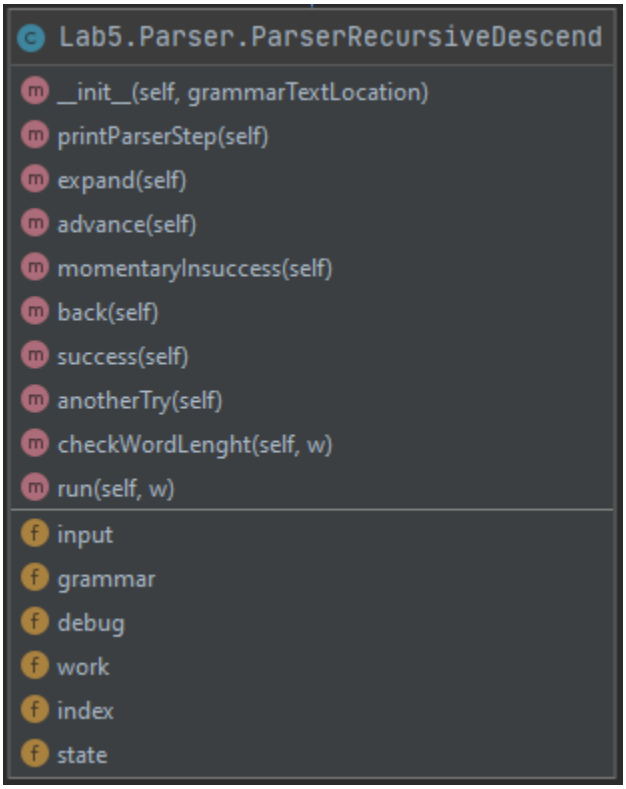
Lab 6 – Part 2

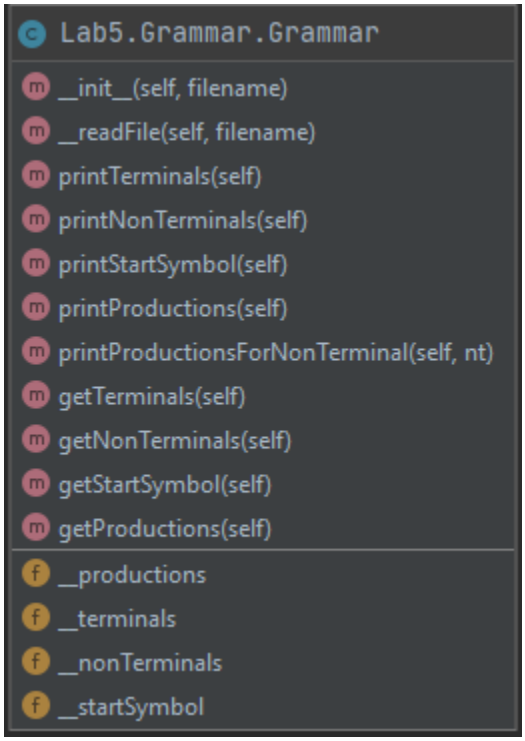
Recursive descendent parser – implemented in team with Andrei Oniță

Github link: https://github.com/the-coding-cloud/FLCD/tree/main/Lab5

- Finished implementing another try until the beginning of the lab
- Implemented the parsing strategy (some minor issues have to be solved)

UML Diagram





Grammar

Data Structure

We created the class grammar which stores the grammar from a text file

Constructor(file)

- Pre:
- In: file: string - location of Grammar definition
- Out: a Grammar class
- Post:

  Creates a Grammar that initialises with the terminals, nonTerminals, productions, startSymbol, File.

The terminals, nonTerminals, productions are lists.

Operations:

Function readFile(filename)

- Pre: an initialised fileName path
- In: - fileName : String
- Out: -
- Post:
- Desc: reads the Grammar and loads it in the class lists,

Parser Recursive Descent

Data Structure

We created the class ParserRecursiveDescent

Constructor(file)

- Pre:
- In: file: string - location of Grammar definition
- Out: a Parser class
- Post:

  Creates a Parser that initialises with the work and input stacks, index, state

Operations:

Function expand(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: expands the non terminal into it s first production of terminals

Function advance(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: puts one terminal in the work stack

Function momentaryInsuccess(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: state is change to b

Function back(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: goes back one index

Function success(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: state set to s

Function anotherTry(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: parses the last non terminal to the next set of terminals in its production, or pops the non terminal from work stack to input stack

Function expand(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: expands the non terminal into it s first production of terminals

Function advance(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: puts one terminal in the work stack

Function momentaryInsuccess(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: state is change to b

Function back(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: goes back one index

Function success(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: state set to s

Function anotherTry(filename)

- Pre:
- In:
- Out: -
- Post:
- Desc: parses the last non terminal to the next set of terminals in its production, or pops the non terminal from work stack to input stack