Lab 6 FLCD – Parser

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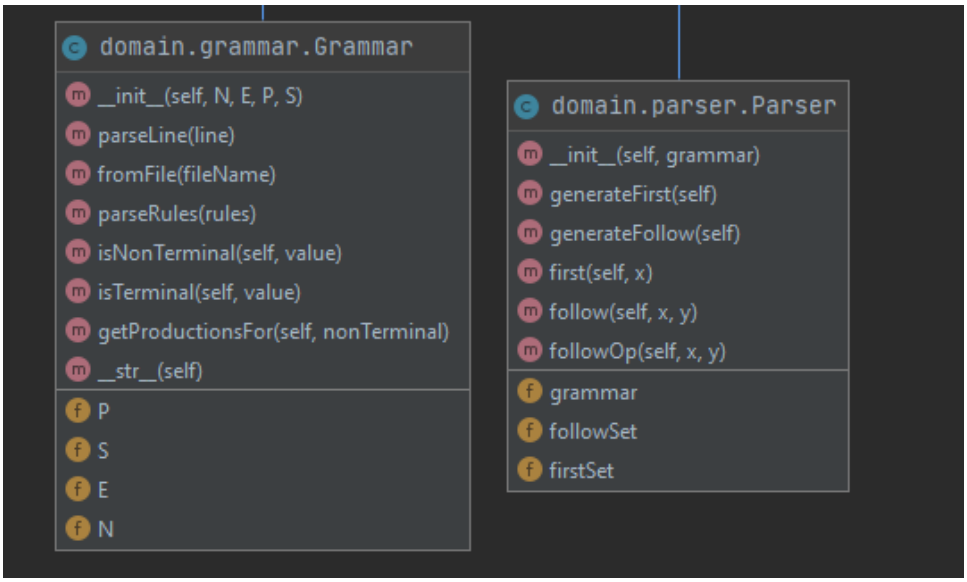
https://github.com/alexovidiupopa/flcd/tree/main/parser

The Grammar class has a field for each (N, E, P, S) set of the grammar, namely terminals, non terminals, productions and starting symbols.

The set of productions P is kept as a list of tuples, of the type (startingSymbol, dest), both strings.

In the Grammar class, most of the methods are for file parsing, however getProductionsFor returns a list for all productions for the specific nonTerminal, for example (S, aA), (S, Epsilon).



Since we are implementing the LL(1) algorithm, we also implemented the **first** and **follow** algorithms.

The **first** algorithm builds a set for each non-terminal that contains all terminals from which we can start a sequence, starting from that given non-terminal.

The **follow** builds a set for each non-terminal basically returns the “first of what’s after”, namely all the non-terminals into which we can proceed from the given non-terminal.

Having these 2 sets built for each non-terminal (and for terminals also, but those are trivial), we proceed to build the **LL(1) parse table**. We follow the rules given in the lecture: we build a table that has as rows all non-terminals + terminals, and as rows, all terminals, plus the “$” sign in both rows and columns. We then follow the rules given in Ms. Motogna’s seventh lecture, slide 9.