

Lab 03: Implementation of an LL(1) Parser

Our objective is to create an LL(1) parser in C for a language defined by a grammar provided by the user.1.

1. Input

- The grammar: the axiom, terminal variables, non-terminal variables, and rules.
- The string to be analyzed.

2. Program functions

- First() : this function takes a non-terminal as input and returns the set of first terminals.
- Next() : this function takes a non-terminal as input and returns the set of next terminals.
- analyze(): this function is used to construct the LL(1) analysis table from the First and Next sets obtained in the previous phase
- Check (): this function is used to check whether the grammar is LL(1) or not.
- Analyze(): this function is used to analyze the string given by the user. It returns True if the string is syntactically correct and False if it is not. (It is better to use a stack to manage the analysis).

3. Output

A message indicating whether the string is syntactically correct or not. If there is a syntax error, report where the analyze function is interrupted.