

<https://github.com/Phe0niX12/FTCD/tree/main/lab6/LFTClab6>

LLParser is a top-down parser for LL(1) grammars. It constructs the parsing table based on the given grammar and sequence file, and performs LL(1) parsing.

Attributes:

grammar (Grammar): The LL(1) grammar for the parser.

first_sets (dict): Dictionary storing First sets for non-terminals.

follow_sets (dict): Dictionary storing Follow sets for non-terminals.

parsing_table (dict): Parsing table storing production rules for LL(1) parsing.

sequence (list): Input sequence to be parsed.

Methods:

__init__(self, grammar, seq_file): Constructor for LLParser.

read_sequence(seq_file): Read the input sequence from a file.

construct_first_sets(): Construct First sets for non-terminals in the grammar.

calculate_first_set(nt): Calculate First set for a given non-terminal.

construct_follow_sets(): Construct Follow sets for non-terminals in the grammar.

calculate_follow_set(nt): Calculate Follow set for a given non-terminal.

construct_parsing_table(): Construct the LL(1) parsing table.

find_prod(nt, term, seen_nt): Find a production in the grammar for parsing table.

calculate_first(symbols, seen_nt): Calculate First set for a sequence of symbols.

parse(): Perform LL(1) parsing on the input sequence.