Documentation LEX

Github: https://github.com/CatalinaArba/LFTC/tree/main/Lab8

1. Overview

The myscanner.lxi file is a Lex (Flex) program designed to recognize and classify tokens in a simple programming language. It recognizes keywords, operators, separators, identifiers, integer constants, string constants, and character constants.

1. Preparation

Before compiling and running the program, ensure that you have a command prompt opened at the location of the myscanner.lxi file. Navigate to the directory using the cd command:

**$ cd path/to/directory**

Replace path/to/directory with the actual path where your myscanner.lxi file is located.

Once you are in the correct directory, proceed with the compilation and execution steps as described in the next sections.

1. Compilation

Compliation:

To compile the Lex file, use the following command:

$ **flex myscanner.lxi**



Generate Executable:

After compiling, you will obtain the lex.yy.c file. Use the following command to generate the executable:

**gcc lex.yy.c**



Running the Program:

Run the compiled program by providing an input file as an argument:

**a.exe p1.txt**

Or

**a.exe p2.txt**

Or

**a.exe p3.txt**

**A screen shot of a computer

Description automatically generated**

Replace p1.txt with the path to your desired input file.

1. Token Recognition

Reserved Words

Recognizes reserved keywords such as read, write, if, else, whileLoop, forLoop, boolean, char, int, double, string.

Operators

Identifies arithmetic and relational operators: +, -, \*, /, %, <, <=, ==, !=, >=, >.

Separators

Recognizes separators including {, }, [, ], (, ), ,.

Identifiers

Matches identifiers according to the regular expression [a-zA-Z\_][a-zA-Z0-9\_]\*.

Integer Constants

Matches integer constants using the regular expression 0|[-]?[1-9][0-9]\*([.][0-9]+)?|[-]?0[.][0-9]+.

String Constants

Recognizes string constants enclosed in double quotes, e.g., "Hello, World!".

Character Constants

Matches character constants enclosed in single quotes, e.g., 'a'.