Tecnológico de Monterrey

Project 2 Lexical Highlighter

TC2037

Jacob García Rodríguez - A01643891

Jean Paul López Pándura - A01637266

Roberto Emiliano Morales Nieto - A01642426

Implementación de métodos computacionales

Grupo 604

Tecnológico de Monterrey Campus Guadalajara

Profesor Enrique Garcia Ceja

Martes 23 de Abril del 2024

Lexical Highlighter

We chose to read txt files that utilize c++ as its programming language, and designed the solution in c++, through the use of the REGEX library, which makes it possible to utilize regular expressions that trigger particular functions when their condition is satisfied.

The lexical categories that we utilized and the regular expressions we used for them on REGEX are:

- Operators (+,-,*,/) - "([\+\-*]|\<\<|\>\>|([^<]\/[^s]))"
- Conditionals (if, else) - "(\b(if|else)\b)"
- Loops (while, for) - "(\b(while|for)\b)"
- Comments (Everything after // and before the change line) - "(\/\/.*[^\n])"

  In order for this to work, we needed an additional condition

  if (commentPos != string::npos) {

  codeBeforeComment = line.substr(0, commentPos);

  line = codeBeforeComment + "" + line.substr(commentPos) + "";

  } else {

  codeBeforeComment = line;

  }

- strings (Everything between “”) - "(".*?")"
- Booleans (true and false) - "(\b(true|false)\b)"
- Data types (string, int, float, bool) - "(\b(int|float|bool)\b)"
- Access keywords (public, private and protected) - "(\b(public|private|protected)\b)"
- Functions (As in the name of the function) - "(\b(\w+)\s*\()"

The only step necessary to run the program is to change the contents in the input file to whatever code you want to highlight. Then, after hitting run, the output file will update with the same code in the input file, with the added highlighting of its particular elements.