Facultad de Ingeniería

Lexical Analyzer

Based on the topics seen in the theroretical sessions, build a lexical analyzer, there are two ways to build it:

- Applying the theoretical concepts seen in class.

- Making use of libraries in programming languages that allow lexical analysis to be carried out, or using tools (some kind of black box) that allow lexical analysis to be carried out.

- You aren't allowed to use FLEX.

The following minimal requirements must be satisfied:

- Present basic tokens:

  > Keyword: print

- Total count of tokens:

  > Tokens: 40

- Reading examples:

  > printf("This is an example...");
  > int x = 10;

- Theoretically, the following requirements must be met:

  > The team must present an initial context-free grammar idea that represents one of the reading examples used in the lexer, applying right recursion and left factoring.

How can we do it? - Lexer

In any of the implementation options, a file or string must be read:

- The string to scan.

- Or the file to scan.

Example of expected output - Lexer

In any of the implementation options for the lexer, based on the reading example presented above, an expected output could be:

> keyword identifier operator constant punctiation

> Total of tokens: 5

Where

- **keyword:** corresponds to keyword token.

- **identifier:** corresponds to identifier token.

- **operator:** corresponds to operator token.

- **constant:** corresponds to constant token.

- **punctiation:** corresponds to punctuation token.

However, you can feel free to name your tokens, but you have to give the explanation of the choose in the assignment report.

Submit specifications

- The application must be packaged following an application development architecture (it is suggested that it be searched as is done in mobile or web development that uses good Software Engineering practices), and it must be called unam.fi.compilers.g5.00 where the 00 is replaced by the team number assigned to them, and share the repository link with public permissions (such as GitHub, GitLab or BitBucket), this is uploaded by the **Project Manager**.

- Example to submit the report: Team00-Compilers-Lexer.pdf, where the 00 is replaced by the team number assigned to them. Also you can present the README.MD as a lexer report.

- There are at least 1 thing that the **project manager** has to submit the **repository link**.

- Penalties range from .5 points to 1 point for not following specifications.