

Report on lexical analysis of my language

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Objective:

1. To learn lexical analysis implementation on our custom input.
2. To identify various language constructs.
3. To learn about implementation of basic language concepts.

Introduction:

Lexical analysis is a crucial first step in compiling code. It involves breaking down the source code into tokens, which represent meaningful code elements. This process helps convert human-readable code into a format that computers can understand and process.

Discussion:

Source code is scanned and divided into distinct tokens. Source code is divided into multiple virtual sub-section (like MAIN_SEC, IF_SEC, COMMENT_SECTION, LOOP_SEC etc) to have good control over the user input. Then I have used regex to match the input string based on the section where control is now located. Here I have covered token identification and categorization of **variables, Data types, Arithmetic and Conditional Operators, Control Structures, Comments, Loop** etc

Conclusion:

Lexical analysis is a foundational process in compiler design. It serves as the initial step in translating human-readable source code into a format suitable for computer processing. By identifying and categorizing tokens, lexical analysis helps in execution of code. It plays a vital role in the compilation process and enables the development of efficient and functional language.