

Punctuators

1. **EOF (End of File):** Stands for "End of File," representing the end of the input source code.
 - Token: EOF
 - Regular Language: $\backslash Z$
2. **Identifier:** Represents identifiers or variable names in the language.
 - Token: <identifier>
 - Regular Language: $[a-zA-Z_][a-zA-Z0-9_]^*$
3. **Integer Constant:** Represents integer constants.
 - Token: <INTEGER_CONST>
 - Regular Language: $[0-9]^+$
4. **Parentheses:** Represents various types of parentheses, including (), [], and {}.
 - Tokens: <parenthesis>
 - Regular Language: $[() \[\] \{ \}]$
5. **Quotations (Double Quotes):** Represents double quotation marks used to denote strings.
 - Token: <quotations>
 - Regular Language: $\backslash "(\\.|[^\"])^*\backslash "$
6. **End of Statement (Semicolon):** Represents the end of a statement
 - Token: <end_of_stmt>
 - Regular Language: ;
7. **Comma:** Represents a comma used in lists or function arguments.
 - Token: <comma>
 - Regular Language: ,

Operators

1. **Assignment Operator:** Represents the assignment operator =.
 - Token: <operator>
 - Regular Language: =
2. **Arithmetic Operators:** Basic arithmetic operators.
 - Token: <operator>
 - Regular Language: $[+|-|*|/|\%]$
3. **Equality Operator:**
 - Token: <operator>
 - Regular Language: ==
4. **Inequality Operator:**

- Token: <operator>
- Regular Language: !=

5. Comparison Operators:

- Tokens: <operator>
- Regular Language: [><]=?

6. Modulo Operator:

- Token: <operator>
- Regular Language: %

7. Logical Operators:

- Tokens: <operator>
- Regular Language: &&||\|

Dot Operator:

- Token: <dot>
- Regular Language: \.

Keywords

Token : <key_word>

1. Data Type Keywords: Data type keywords

- Regular Language: #I|#F|#C|#S|#A|#L|#T|#M|#B

2. Operation Keywords: Operations on data types

- Regular Language: add|cut|get|edit|len|write|ladd|lcut|slice|aadd

3. Conditional Keywords: Conditional statements

- Regular Language: if|elseif|else

4. Looping Keywords: Looping constructs

- Regular Language: loopy|repeat

5. Function Keywords: Used for function definition

- Regular Language: define|submit

6. Exception Handling Keywords:

- Regular Language: try|catch

7. Variable Declaration Keyword:

- Regular Language: let

Literals

1. Boolean Literals:

- Tokens: true, false
- Regular Language: true|false

These regular language representations help in defining the lexical structure of your programming language, guiding the lexer in recognizing and tokenizing different elements in the source code.