# Output of a Scanner.

A lexical analyzer or scanner is the first phase of a compiler. It is responsible for reading the input characters and producing a sequence of tokens for the syntax analyzer.

Below are the inputs and outputs of a simple lexical analyzer I designed in LAB 1.

**INPUT**:

**OUTPUT:**

The Outputs are basically the tokens generated from the input. The tokens are generated using a regex that is designed to recognize mathematical expressions. The regex is able to recognize numbers and operators (+, -, \*, /, =, %). From the input, we know that *12* and *123* are Numbers and *+* and *=* are operators. The output of the scanner confirms this.

The regular expressions used are:

1. *-* **To recognize Numbers**
2. *[\ –* **To recognize the operators**
3. *–* **To validate that the input only contains numbers and operators. Anything else would cause the scanner to produce an error.**
4. *-* **To Validate that there are no operators at the beginning of the input.**
5. *-* **To validate that there are no operators at the end of the input.**