G++

G++ is a language being developed for teaching purposes at Gebze Technical University. This language has the following "vision":

- Lisp like syntax
- Interpreted
- Imperative, non-object oriented
- Static scope, static binding, strongly typed, …
- A few built-in types to promote exact arithmetic for various domains such as computational geometry

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G++ Interpreter

- Starting G++ without an input file…

  $ g++

  > _ \\READ-EVAL-PRINT loop starts here…

- Starting G++ with an input file…

  $ g++ myhelloword.g++

  \\READ-EVAL-PRINT everything in the file…

  > _ \\READ-EVAL-PRINT loop starts here…

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G++ – Lexical Syntax

- Keywords: *and, or, not, equal, less, nil, list, append, concat, set, deffun, for, if, exit, load, print, true, false*
- Operators: *+ - / * ( ) ,*
- Comment: Line or part of the line starting with *;;*
- Terminals:
  - *Keywords*
  - *Operators*
  - *Literals: The following are the only predefined types in this language.*
    - *Unsigned integers.*
    - *Unsigned fractions – two unsigned integers separated by the character ":". E.g., 123:12 is the fraction* $\frac{123}{12}$
  - *Identifier: Any combination of alphabetical characters, digits and "_" with only leading alphabetical characters.*

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G++ Lexer Tokens

KW_AND, KW_OR, KW_ NOT, KW_EQUAL, KW_LESS, KW_NIL, KW_LIST, KW_APPEND, KW_CONCAT, KW_SET, KW_DEFFUN, KW_FOR, KW_IF, KW_EXIT, KW_LOAD, KW_DISP, KW_TRUE, KW_FALSE

OP_PLUS, OP_MINUS, OP_DIV, OP_MULT, OP_OP, OP_CP, OP_COMMA

COMMENT

VALUEF

IDENTIFIER

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