

Documentation – IBTL Syntax (Lexical Structure)

- Types

- float
- int
- string
- boolean

- **Variables** may only be declared using alphabetical characters and underscores, and cannot be the same spelling as a keyword or type (*int, float, bool, string, assign, let, cos, sin, tan, and, or, not, iff, log, while, if, println, etc.*).

- Natural **logarithmic** operator will be *log*.

- The **exponential** operator *e* to evaluate $e^{\text{(real number)}}$ will be represent by *exp*.

- **Strings** may contain any characters except quotation marks, and must start and end with quotation marks

- The **real** type will be called *float* instead

- The **float** type may be represented in the following forms

- 2.1
- 2e1
- 2.0e1
- 2.0e+1
- 2.0e-1

Token Data Structure

Due to the nature of Haskell, our tokens will be stored in a list. Each token consists of one from the bulleted list below.

Token:

--Types

- VarId String
- IntTok Int
- FloatTok Float
- StringTok String
- BoolTok Bool

-- Symbols

- LeftParen
- RightParen

-- Operators

- Minus
- Plus
- Mod
- Carrot
- Mult
- Div
- Equal
- Less

-- Keywords

- KW_And
- KW_Or
- KW_Not
- KW_Iff
- KW_Assign
- KW_Cos
- KW_Exp
- KW_If
- KW_Let
- KW_Logn
- KW_PrintLn
- KW_Sin
- KW_Tan
- KW_While
- KW_Int
- KW_Float
- KW_Bool
- KW_String
- EOF
- Error String