COMP 325
Language 1 : Now with more calculation

James *Logan* Mayfield

Fall 2015

Abstract

Your first interpreter is an extension of the basic calculator language developed in chapters 12 and 13 of PAPL. The extensions are primarily designed to get you moving with the basics of language design and development with Pyret before we get into more advanced languages.

Due Wednesday, 9/16

Your first parser, desugarer, and interpreter assignment is an extension of the *Arith* language given in the book and discussed in class.

1. Boring Minimal Extensions (Do all)
   (a) Extend the language to include binary subtraction, unary negation, division, and modulo operators.
   (b) Extend the language to include the multiplicative inverse (x^{-1}) and an absolute value function.
   (c) Catch syntax and run-time errors and return descriptive and helpful error messages. Do not let the host language (Pyret) catch and report errors.
2. More of the same Snooze-ville code (Do at least one)
   (a) Extend the language to include the natural logarithm (ln), base 10 logarithm (log), and the base 2 logarithm (lg).
   (b) Extend the language to include an exponentiation operation (x^y), the exponential function (e^x), and an n^{th} root operation.

1 Requirements

Your code must:

- Be well documented and tested (Statements of purpose for all procedures. All functions annotated to provide explicit signatures, all functions include a where block with tests achieving full coverage.)
- Make good, appropriate use of desugaring.
- Use good style (i.e. naming, indentation, spacing, *use of helper procedures*)
- Not line wrap when printed

You must submit:

- A printed copy of your source document(s) in class
- Soft copy of your source document(s) upon request.