CSE 3302 Lab Assignment 1

Due February 20, 2014

Goal:

Elementary understanding of Pascal and JavaScript.

Requirements:

1. Separate the PL/0 language processor from Lab 1 Spring 2013 into its compiler and interpreter portions such that:

   a. The compiler (scanner, symbol table, recursive descent parser, and code generation) will still be in Pascal, but whose functionality is reduced to generating object code listings suitable for pasting into part b.

   b. The interpreter will be translated into JavaScript so the PL/0 machine runs in a web browser. The PL/0 machine will still include small extensions for an input `in` and an output stream `out`.

   c. An html file (`http://ranger.uta.edu/~weems/NOTES3302/LAB1SPR14/pl0.html`) is provided, but may be changed.

      1. The textarea `inputbox` is used for pasting object code. You may use any format you wish for the object code. Approaches for dealing with text include 1) the JavaScript string methods and `parseInt()` and 2) JSON. The "Load" button is intended to indicate that pasted text should be processed.

      2. The "Run" button is intended to indicate that the PL/0 machine should run.

      3. Reading integers from the `in` stream (`rdi`) should be implemented using JavaScript's `prompt()`. Your code should assure the user enters appropriate values. The "cancel" option for `prompt()` is convenient for indicating end-of-stream. After handling the input, the `rdi` processing should dump the PL/0 registers and run-time stack to the textarea `rtsOutput`. Output to `rtsOutput` is not cumulative, i.e. clear the textarea for each dump.

      4. The textarea `pl0Output` is used to output integers for the `out` output stream (`wro`). It is cumulative.

2. Email your programs and .html as a `.zip` archive to `sourabh.bose@mavs.uta.edu` by 9:15 a.m. on February 20, 2014. Your submission message should indicate what browser(s) you tested with.

Getting Started:

1. The needed Pascal code is: `http://ranger.uta.edu/~weems/NOTES3302/LAB1SPR13/plzero.io.pas`

2. Your JavaScript PL/0 machine should produce identical results as the Pascal PL/0 machine except for extreme arithmetic situations like overflow, underflow, and zero divides.

3. Test cases are at `http://ranger.uta.edu/~weems/NOTES3302/LAB1SPR14/`

4. An additional textarea for tracing is optional.