CSE 3302 Lab Assignment 1

Due February 12, 2013

Goal:

Understanding of Pascal and elementary compiler/interpreter concepts.

Requirements:

1. Add simple I/O to PL/0 (`plzero.pas`) as an input stream (`in`) and an output stream (`out`).

   a. An integer may be read from the input stream by using `in` as an r-value.

   b. An integer may be written to the output stream by using `out` as an l-value.

   c. The actual input stream will be as integers, one per line. `-999999` will end the stream and will be supplied to the PL/0 program once. Attempting to access the input stream after `-999999` will abort. "`?`" should be used as a prompt.

   d. The output stream will be integers written one per line. Each output line should begin with "`!`".

   e. The output stream does not terminate.

   f. "`in`" and "`out`" are identifiers for the streams. These are not reserved words and may be "masked" by other declarations.

2. Email your program to `mehra.nourozborazjany@mavs.uta.edu` by 10:45 a.m. on February 12, 2013.

Getting Started:

1. It is convenient to provide a source program and input to your compiled PL/0 interpreter by:

```
cat add.pl0 - | plzero.io
    0 var                                   start pl/0
    1   x,y;                               ? 1
    1                                      ? 1
    1 begin                                ! 2
    2   x:=in;                             ? 5
    4   while x#-999999 do                 ? 6
    9   begin                              ! 11
    9     y:=in;                           ? 11111
   11     if y#-999999 then                ? 12345
   15     begin                            ! 23456
   16       out:=x+y;                      ? -123
   20       x:=in                          ? 123
   21     end;                             ! 0
   22     if y=-999999 then                ? -999999
   26       x:=-999999                      end pl/0
   28   end
   30 end.
```

2. A few small corrections have been made to Wirth's PL/0 code, including using `longints`. The source is at:

   `http://ranger.uta.edu/~weems/NOTES3302/NEWNOTES/NOTES02/plzero.pas`

3. You may reuse error numbers. For example, error 12 indicates "Assignment to constant or procedure is not allowed" and would also apply to "`in := ...`".