CSE 3302/5307 Lab Assignment 1

Due October 7, 2014

Goals:

Understanding of JavaScript and compiler/interpreter concepts.

Requirements:

1. Extend the baseline PL/0 compiler/interpreter for:

   a. A procedure `cvline(x0,y0,x1,y1)` to draw a black line of width 1 between two points.
   b. A procedure `cvbox(x,y,width,height)` to draw a filled blue box with its upper left corner at the indicated point.
   c. Displaying the mouse position even before a PL/0 program has executed (by assuring that `canvas.onmouseout` and `canvas.onmousemove` always have handlers).
   d. A procedure `stop` (no arguments) that allows setting up breakpoints within PL/0 source code. Like breakpoints set up "externally" through the `breakpointbox` textarea, the run-time stack should be dumped.
   e. A procedure `die` (no arguments) that allows PL/0 programs to throw an exception to be caught by the interpreter.
   f. A more resilient/consistent user interface based on the provided "buttons enabled" finite-state machine, including a `stop` button.

2. Submit your *zipped* files on Blackboard by 1:45 p.m. on October 7. Be sure to indicate the browser(s) you tested with.

Getting Started:

1. Useful files, including baseline code and HTML, are at: http://ranger.uta.edu/~weems/NOTES3302/LAB1FALL14/

2. There will be no changes to much of PL/0, including the compiler (functions `textStream` through `block`).

3. The `stop` button (or code modification during execution) can only be processed while a `wait` has suspended the interpreter (since everyday JS has only one thread of execution). It will be useful to save the timeout ID from the `setTimeout` for a `wait` to cancel resumption with a call to `clearTimeout`. These are represented by dotted edges.