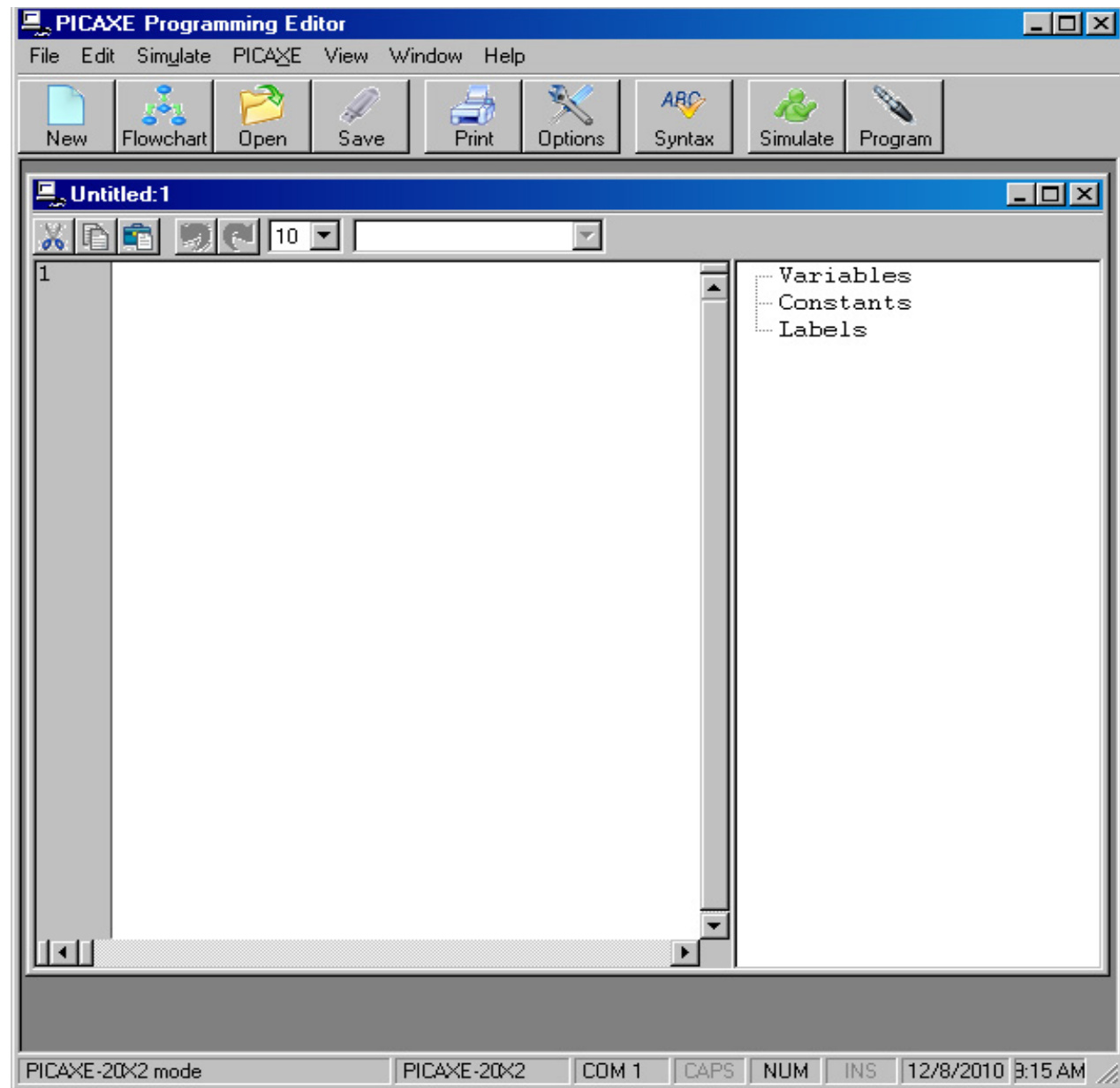


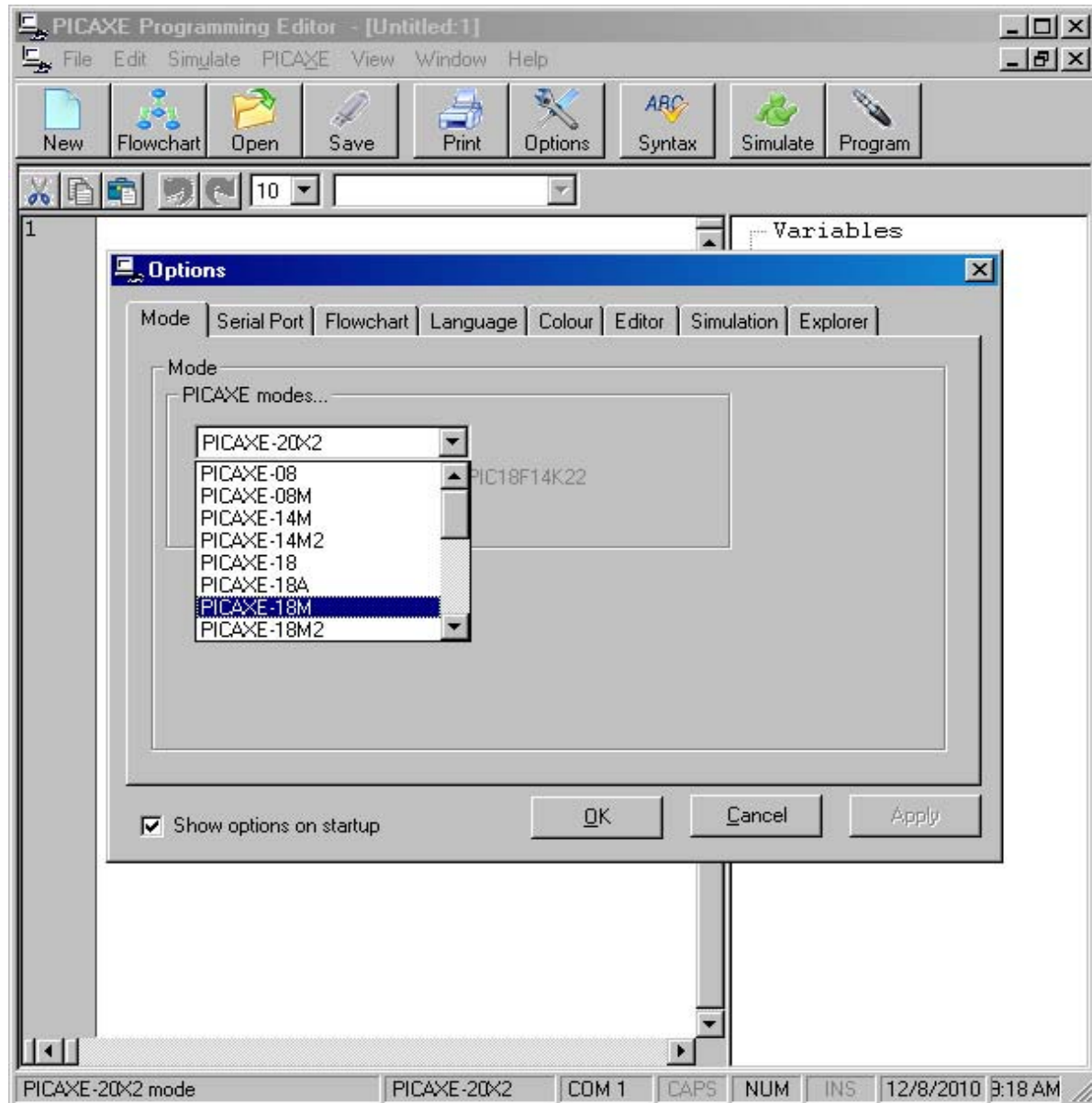
PICAXE Programming Editor

Programming Using Flow Charts

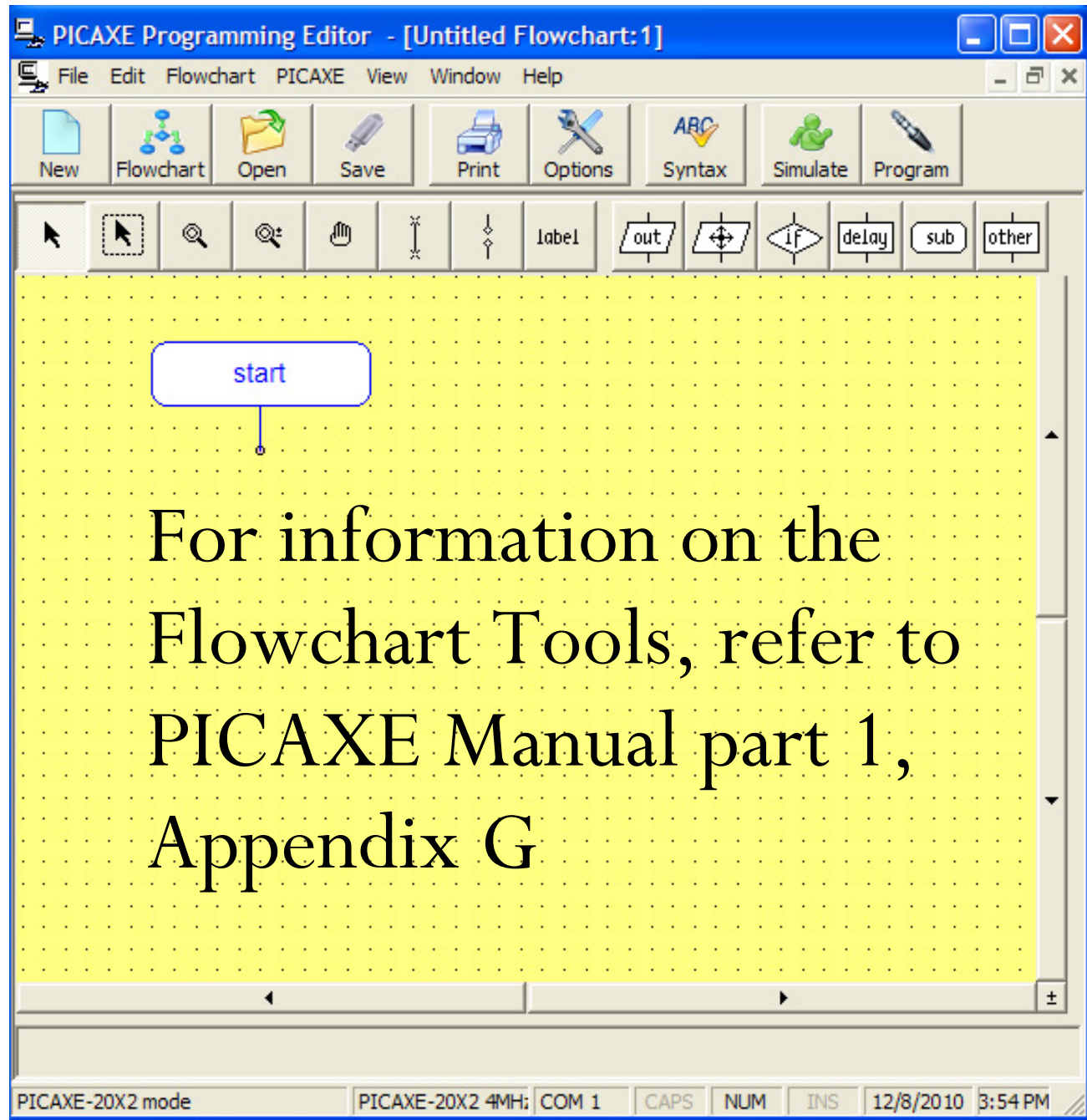
The Work- space



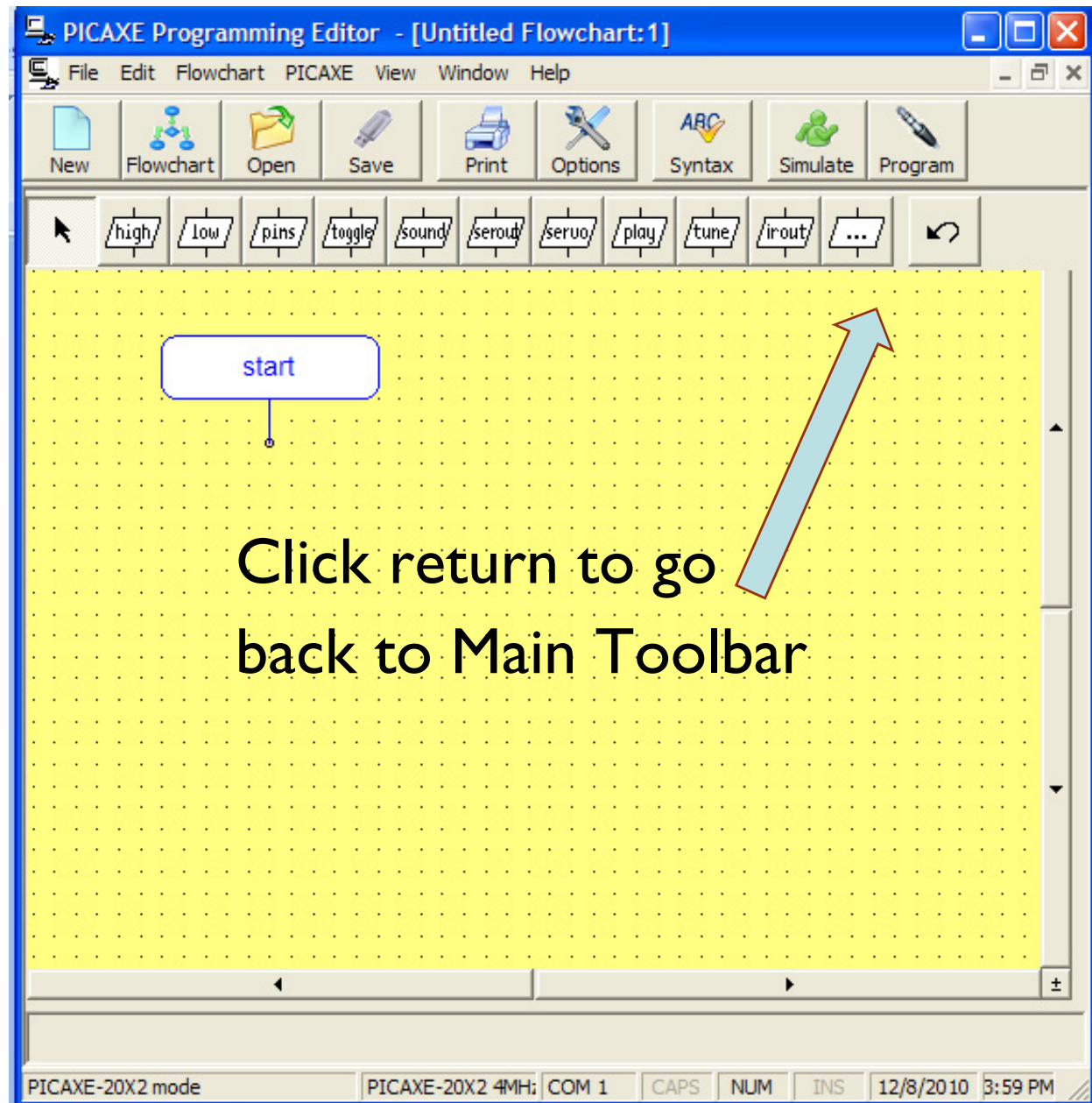
Select PICAXE Version



New Flow- chart



Output Toolbar



Outputs

The screenshot shows the PICAXE Programming Editor interface. The flowchart contains the following blocks:

- start**: A rounded rectangle block at the top of the flowchart.
- high 0**: A parallelogram block connected to the start block.
- low 1**: A parallelogram block connected to the high 0 block.
- let pins = 255**: A rectangle block connected to the low 1 block.
- toggle 3**: A parallelogram block connected to the let pins = 255 block.

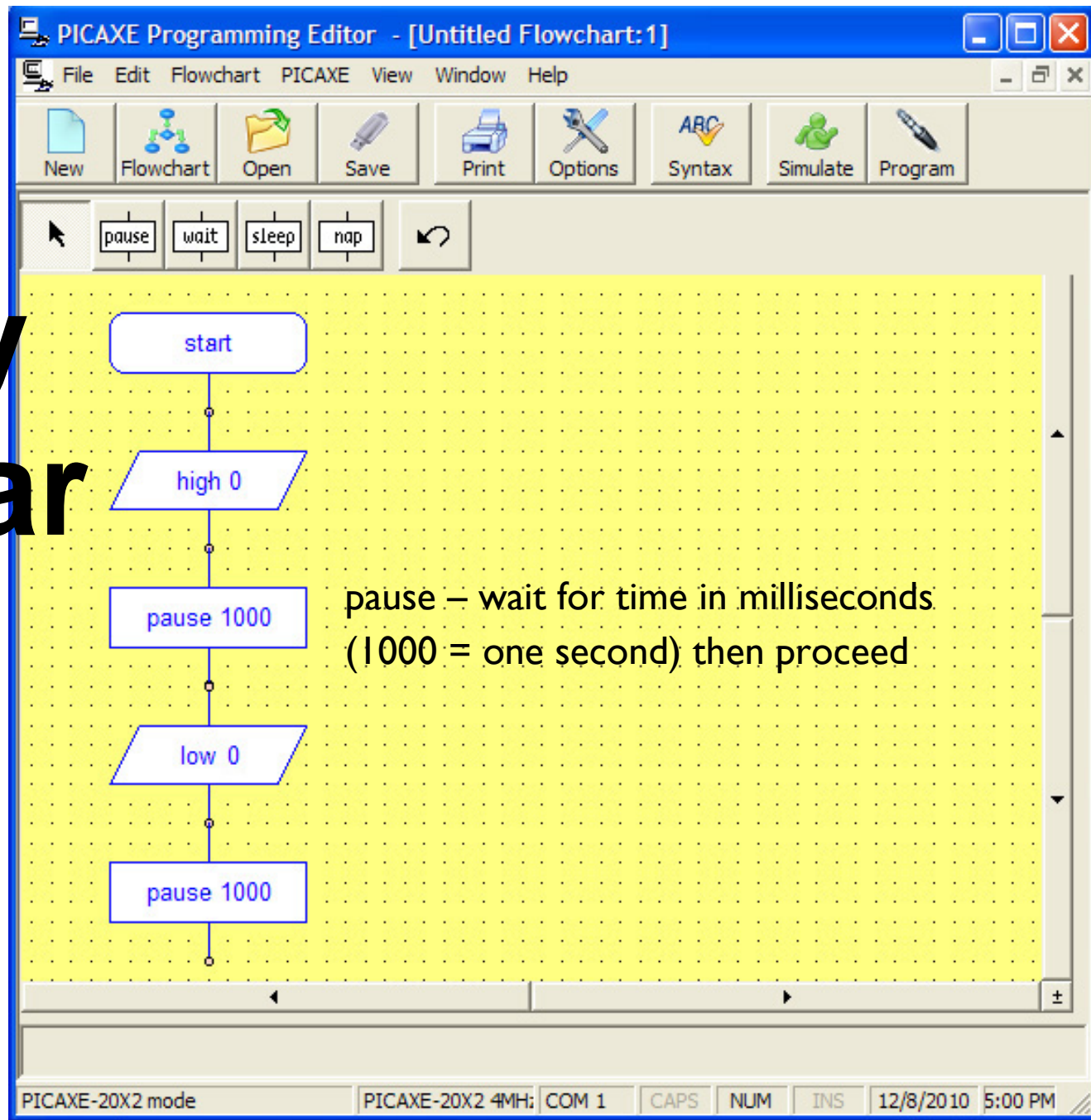
Descriptions of the output blocks:

- high** - sets the designated pin to high voltage (+5V)
- low** - sets the designated pin to low voltage (0V)
- let pins** – sets the voltage on all 8 pins
The decimal value is output as binary
- toggle** – inverts the output on the designated pin or pins

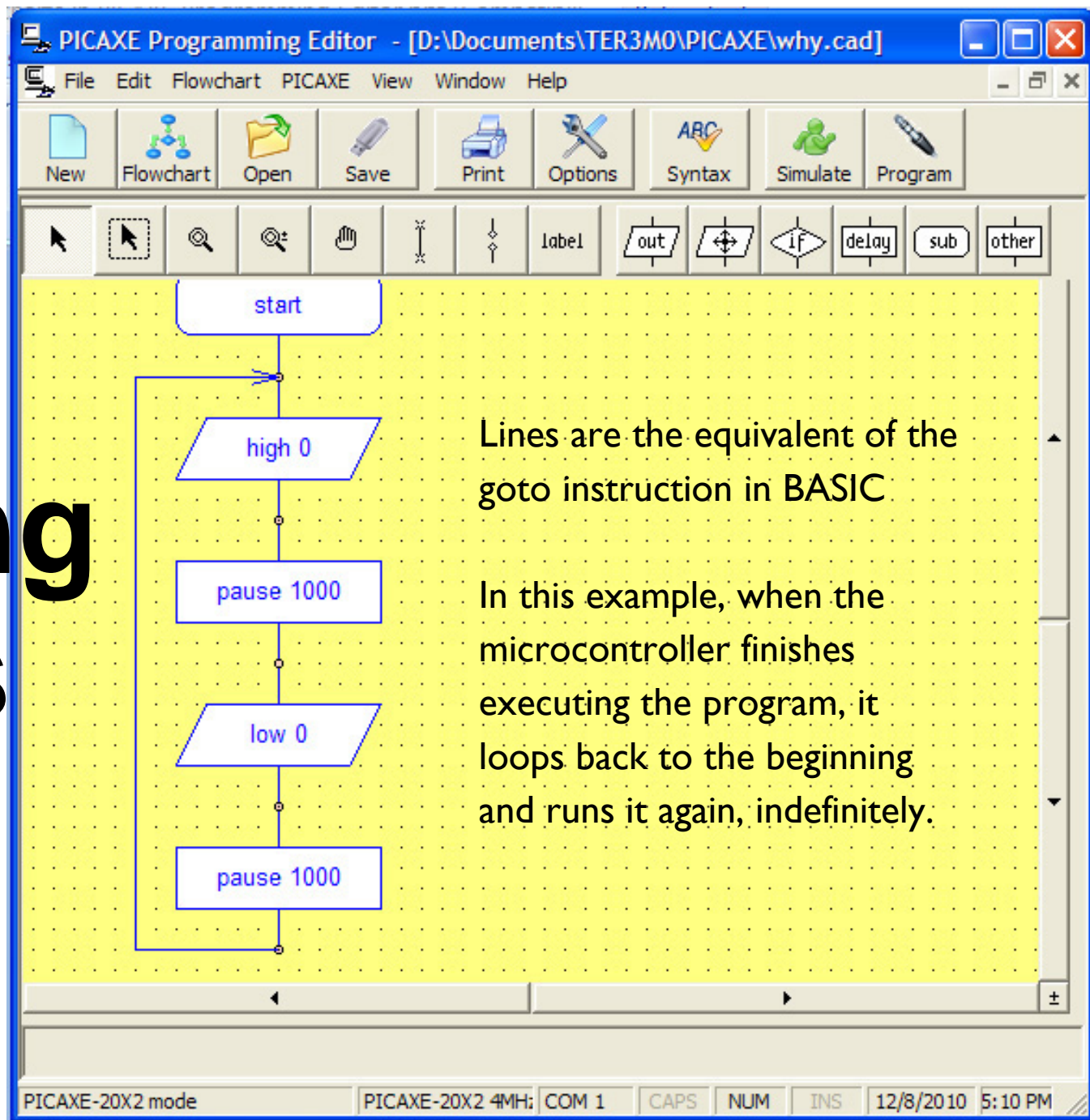
At the bottom of the editor, there is a status bar showing:

- let pins = 255
- Click outputs on or off! ☒ 7 ☒ 6 ☒ 5 ☒ 4 ☒ 3 ☒ 2 ☒ 1 ☒ 0
- PICAXE-20X2 mode
- PICAXE-20X2 4MH; COM 1
- CAPS NUM INS
- 12/8/2010 4:35 PM

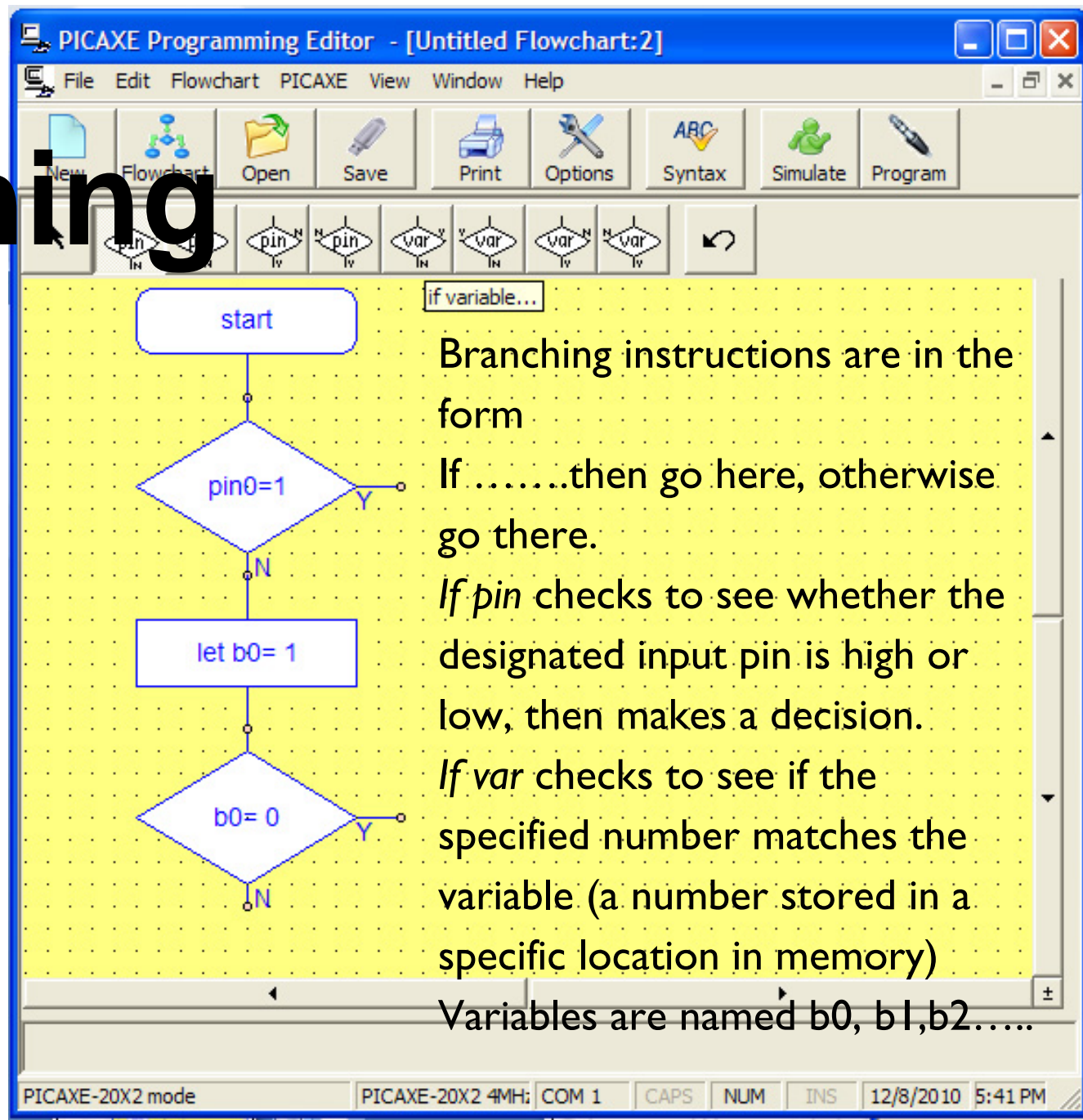
Delay Toolbar



Drawing Lines



Branching



The screenshot shows the PICAXE Programming Editor interface. The title bar reads "PICAXE Programming Editor - [Untitled Flowchart:2]". The menu bar includes File, Edit, Flowchart, PICAXE, View, Window, and Help. The toolbar contains icons for New, Flowchart, Open, Save, Print, Options, Syntax, Simulate, and Program. Below the toolbar is a palette of flowchart symbols, including input/output pins, variables, and decision diamonds. The main workspace has a yellow dotted background and contains a flowchart with the following steps:

- A rounded rectangle labeled "start".
- A decision diamond labeled "pin0=1". The "Y" (Yes) branch exits to the right, and the "N" (No) branch exits downwards.
- A rectangle labeled "let b0= 1", connected to the "N" branch of the first diamond.
- A second decision diamond labeled "b0= 0". The "Y" branch exits to the right, and the "N" branch exits downwards.

To the right of the flowchart, there is explanatory text:

if variable...

Branching instructions are in the form
Ifthen go here, otherwise go there.

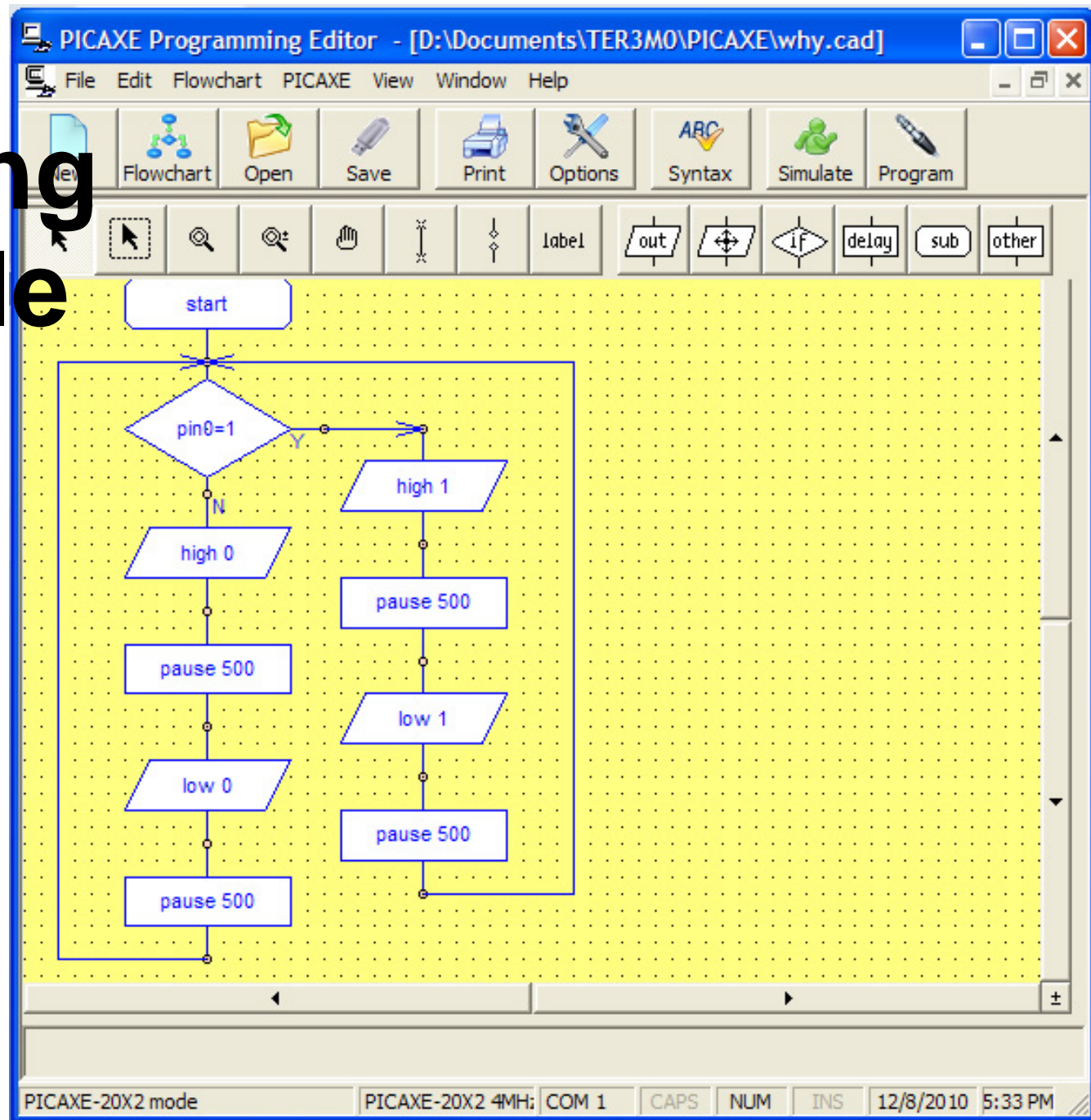
If pin checks to see whether the designated input pin is high or low, then makes a decision.

If var checks to see if the specified number matches the variable (a number stored in a specific location in memory)

Variables are named b0, b1,b2.....

The status bar at the bottom shows "PICAXE-20X2 mode", "PICAXE-20X2 4MH:", "COM 1", "CAPS", "NUM", "INS", "12/8/2010", and "5:41 PM".

Branching Example



1. write a program that makes B.0 high.
2. write a program that makes four LEDs flash on and off at the same time
3. write a program that makes all four LEDs turn on and off one at a time at intervals of .25 sec.
4. rewrite the first three programs using the “pins instruction”
5. Write a program that causes LED 0 to flash when input C.0 is high and LED 1 to turn on when it is low.
6. Add more code to program 5 to make LED 2 flash when input C.1 is high and LED 3 turn on when it is low.
7. Write a program to make 8 LEDs turn on one at a time in a sequence. Make the pattern repeat continuously.
8. Modify program 7 so that the LEDs follow one pattern when C.0 is high, and a different pattern when C.0 is low.