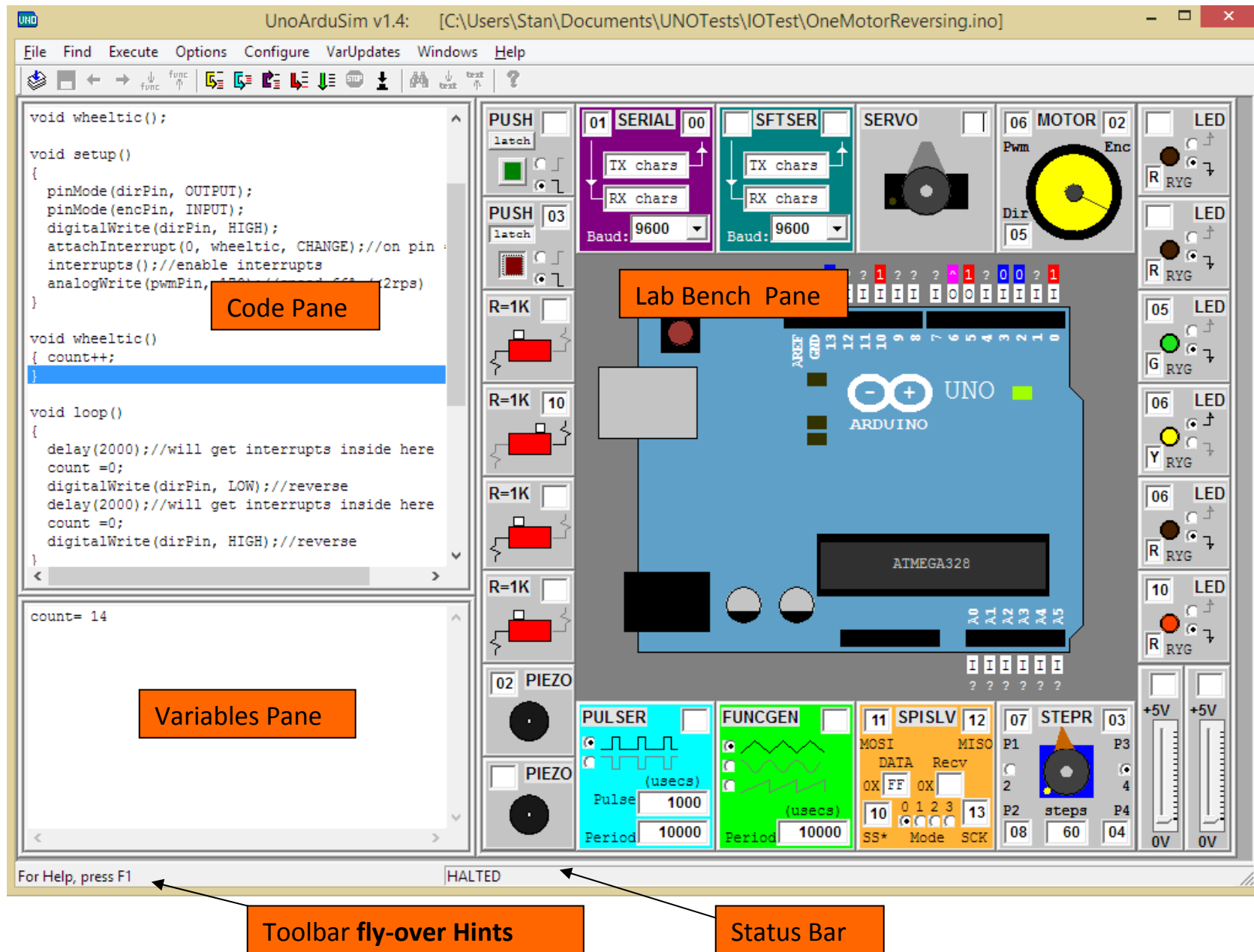


UnoArduSimV1.4 Quick Help



Code Pane

```

/* Use File->Load Prog to
   load a different Program
*/

int count;


void setup()
{
  count=0;
}



void loop()
{
  count=count+1;
  delay(100);
}




//the "int main()" below is IMPLICIT in Arduino
//but is shown here EXPLICITLY by UnoArduSim
int main()
{
  setup();
  while(true)
  {



```

Step or run execution using , , , or .

Click to highlight a line and then click **RunTo**  to halt at a specific program line.

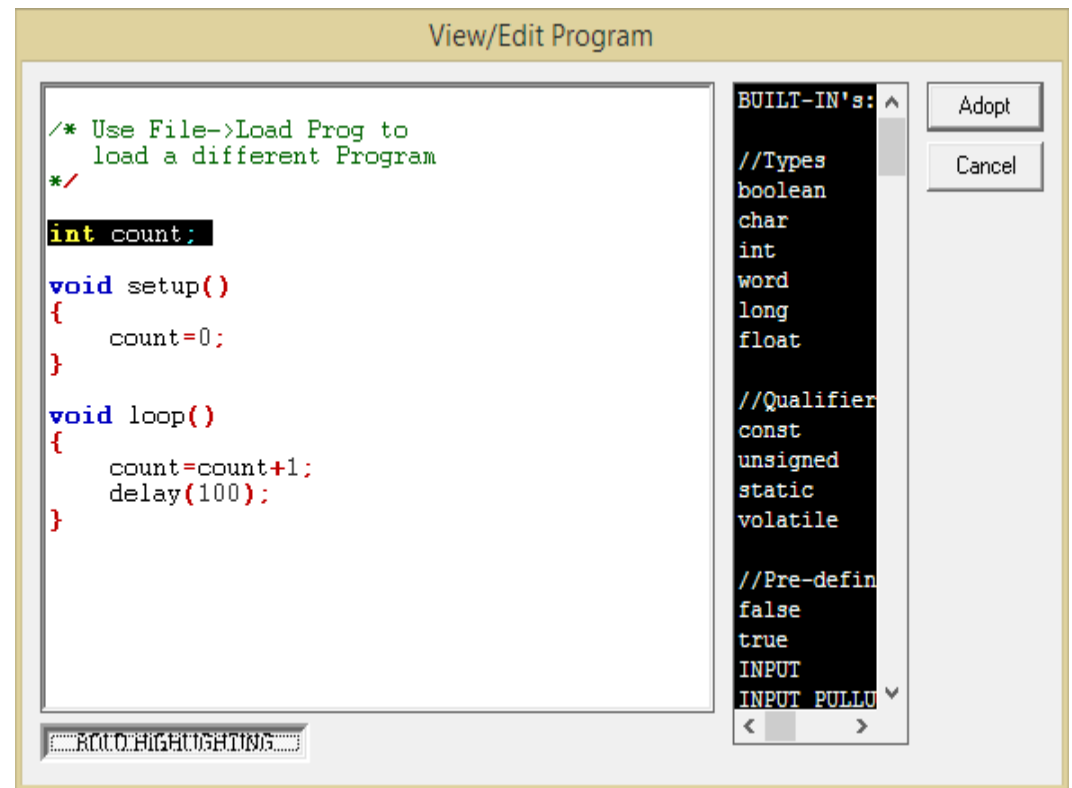
Click anywhere then use **PgDn** and **PgUp** or  and  to jump between **functions**.

Set search text with  and then jump to that text using  and .

Move between `#include`'d files using  , .

View/Edit

To open, **double-click** on a Code Pane line, or use **File→View/Edit.**,



Will be auto-tab-indent formatted if chosen from **Config→Preferences**,

You can also add or delete tabs to a group of lines using **right-arrow** and **left-arrow** (after first selecting a group of 2 or more consecutive lines).

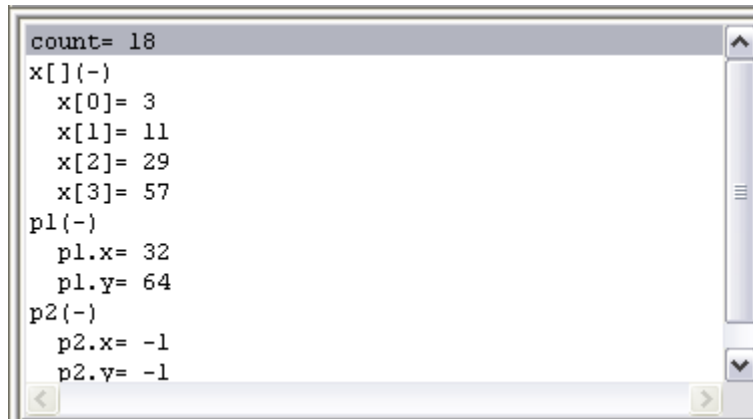
Find (use **ctrl-F**), **Replace** (use **ctrl-H**), and **Undo** (use **ctrl-Z**),

ctrl-PgDn and **ctrl-PgUp** to jump to next (or previous) empty-line break,

Double-click on a '{ ' or '}' ' brace to find its hing brace partner , Move

To add an item (after the caret) from the right-hand list, double click it.

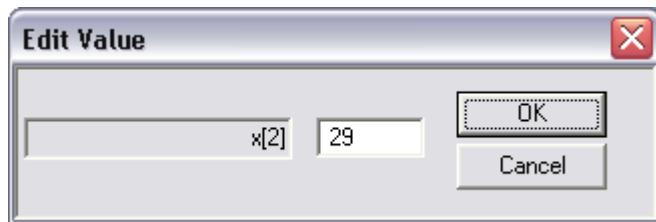
Variables Pane



Click on **(+)** to **expand**, or on **(-)** to **collapse** arrays and objects.

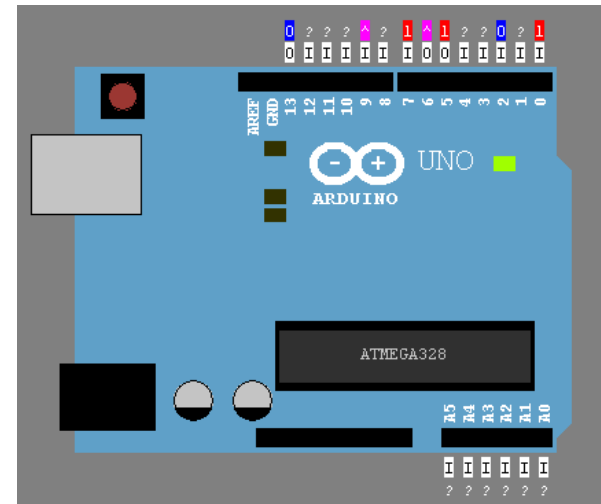
PgDn and **PgUp** or  and  allows you to quickly jump between **variables**.

Use the **VarUpdates** menu to control update frequency when **Run-ning**.

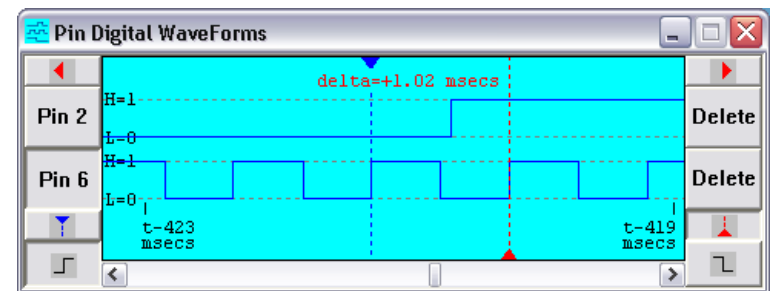


Double-click to change any variable to a new value in the middle of (halted) program execution.

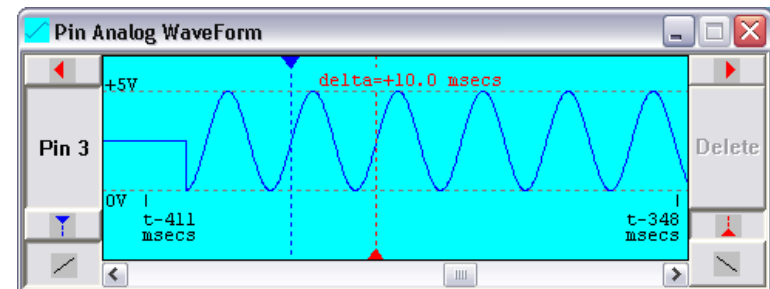
Lab Bench Pane Uno



Left-click any pin to create (or add to) Pin Digital WaveForms.



Right-click any pin to create Pin Analog WaveForm window.



To **ZOOM IN** and **ZOOM OUT** use the mouse wheel, or keyboard shortcuts **CTRL-up_arrow** and **CTRL-down_arrow**.

Lab Bench Pane I/O Devices

Set numbers and types of each using the **Config→ I/O Devices** menu selection. Set pins using a 2-digit value from 00 to 19.

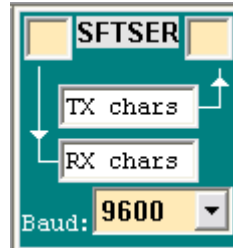
Serial (SERIAL)



Type one or more characters in the upper (TX chars) edit and **hit Return**.

Double-click to open **a larger window for TX and RX characters**.

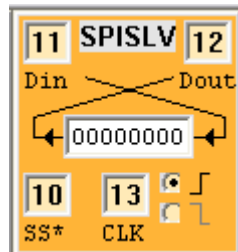
Software Serial (SFTSER)



Type one or more characters in the upper (TX chars) edit and **hit Return**.

Double-click to open **a larger window for TX and RX characters**.

Shift Register Slave (SRSlave)

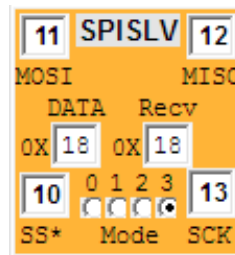


A simple shift-register device

Edge transitions on CLK trigger shifting.

SS* low, drives MSB onto Dout.

SPI Slave (SPISLV)

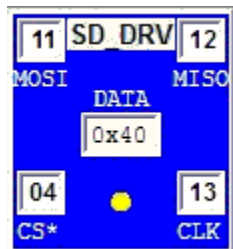


A mode-configurable SPI slave device (MODE0, MODE1, MODE2, or MODE3)

Double-click to open **a larger window** to set/view hex **TX and RX bytes**

SS* low, drives DATA MSB onto MISO.

SD Disk Drive (SD_DRV)

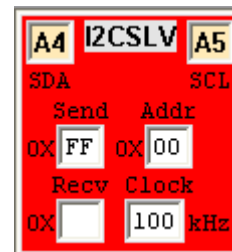


A small 8Mbyte SD drive driven from SPI signals, and mirrored in an '**SD**' subdirectory in the loaded program's directory.

Double-click to open **a larger window** to see **Directories, Files, and content**

CS* low to activate.

Two-Wire I²C Slave (I2CSLV)



A *slave-mode-only* I2C device.

Double-click to open **a larger window** to set/view hex **Send and Recv bytes**

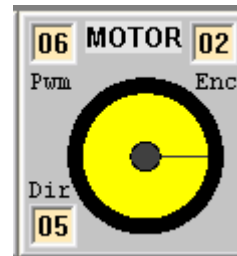
Stepper Motor (STEPR)



Accepts control signals on either 2 or 4 pins.

Use `#include <Stepper.h>`.

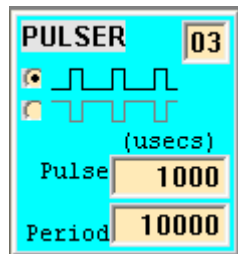
DC Motor (MOTOR)



Accepts PWM signals on Pwm pin, level signal on Dir, and outputs 8 highs and lows per wheel revolution on Enc.

Full speed is approximately 2 revs per second.

Digital Pulser (PULSER)

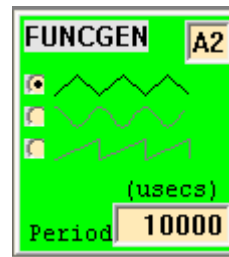


Minimum period 50 microseconds

Min pulse width 10 microseconds.

Choose positive-going pulses (0 to 5V) or negative-going pulses (5V to 0V).

Analog Function Generator (FUNCGEN)



Minimum period is 100 microseconds

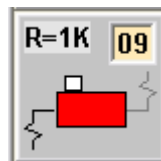
Sinusoidal, triangular, or sawtooth waveforms.

Servo Motor



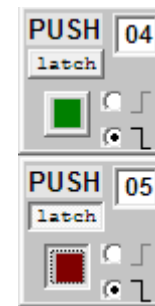
Accepts pulsed control signals on specified pin

Slide Switch Resistor (R=1K)



A 1 k-Ohm pull-up to +5V or a 1 k-Ohm pull-down to ground

Push Button (PUSH)



Normally-open **momentary** pushbutton to +5V or ground

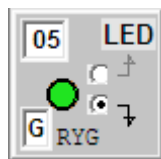
Normally-open **latching** pushbutton to +5V or ground (depress "latch" for this mode)

Piezoelectric Speaker (PIEZO)



"Listen" to signals on any chosen Uno pin, .

Coloured LED (LED)



R,Y, or G LED to either ground or to +5V





Analog Slider

A slider-controlled potentiometer. 0-5V








Menus








File menu commands:

 <u>Load INO or PDE Prog</u>	Allows the user to choose a program file having the selected extension. The program is immediately parsed
<u>View/Edit</u>	Opens the loaded program for viewing/editing.
 <u>Save</u>	Save the edited program contents back to the original program file.
<u>Save As</u>	Save the edited program contents under a different file name.
 <u>Next (#include) file</u>	Advances the CodePane to display the next #include'd file
 <u>Previous</u>	Returns the CodePane display to the previous file
<u>Exit</u>	Exits UnoArduSim.

Find menu commands:

Prompt	Click in either the Code Pane or the variables Pane to give it the active focus for this menu's commands.
 <u>Find Next Function/Var</u>	Jump to the next Function in the Code Pane (if it has the active focus), or to the next variable in the Variables Pane (if instead it has the active focus).
 <u>Find Previous Function/Var</u>	Jump to the previous Function in the Code Pane (if it has the active focus), or to the previous variable in the Variables Pane (if instead it has the active focus).
 <u>Set Search Text</u>	Pull up a dialog box to edit your to-be-searched-for text..
 <u>Find Next Text</u>	Jump to the next Text occurrence in the Code Pane (if it has the active focus), or to the next Text occurrence in the Variables Pane (if instead it has the active focus).
 <u>Find Previous Text</u>	Jump to the previous Text occurrence in the Code Pane (if it has the active focus), or to the previous Text occurrence in the Variables Pane (if instead it has the active focus).

Execute menu commands:

 <u>Step Into (F2)</u>	Steps execution forward by one instruction, or <i>into a called function</i> .
 <u>Step Over (F4)</u>	Steps execution forward by one instruction, or <i>by one complete function call</i> .
 <u>Step Out Of</u>	Advances execution by <i>just enough to leave the current function</i> .
 <u>Run To</u>	Runs the program, <i>halting at the desired program line</i> -- you must first click to highlight a desired program line before using Run To.
 <u>Run</u>	Runs the program.
 <u>Halt</u>	Halts program execution (<i>and freezes time</i>).
 <u>Reset</u>	Resets the program (all value-variables are reset to value 0, and all pointer variables are reset to 0x0000).
<u>Animate</u>	Automatically steps consecutive program lines <i>with added artificial delay</i> and highlighting of the current code line.
<u>Slow Motion</u>	Slows time by a factor of 10.

Options menu commands:

<u>Step Over Structors/Operators</u>	Fly right through constructors, destructors, and operator overload function during any stepping (i.e. it will not stop inside these functions).
<u>Register-Allocation Modelling</u>	Assign function locals to free ATmega registers instead of to the stack..
<u>Added loop() Delay</u>	Add 200 usec. (by default) to each call to <code>loop()</code> (in case user has not added any delays anywhere)
<u>Error on Uninitialized</u>	Flag as a Parse error anywhere your program attempts to use a variable without having first initialized its value.
<u>Show Program Download</u>	Show program download to the Uno board (with attendant delay).
<u>Big Font</u>	Use a larger font size for the Code Pane, Variables Pane, and View/Edit window.
<u>Bold Font</u>	Use bold typeface for the Code Pane and Variables Pane for better visibility
Configure menu commands:	Configure menu commands:
<u>I/O Devices</u>	<u>I/O Devices</u>
<u>Preferences</u>	<u>Preferences</u>

VarUpdates menu commands:

<u>Allow Reduction</u>	Allow reduced frequency of display updates in the Variables Pane to avoid flicker or reduce CPU load – then values shown are only updated periodically, <i>but also whenever the program is halted.</i>
<u>Minimal Updates</u>	Only refresh the variables Pane display 4 times per second.
<u>HighLight Updates</u>	Highlight the last-changed variable value (will cause scrolling).

Windows menu commands:

<u>Serial Monitor</u>	Add Serial IO device (if none) and pull up a larger Serial monitor TX/RX text window.
<u>Restore All</u>	Restore all minimized child windows.
Prompt	Left-Click or Right-Click an Uno Pin to create a Waveform window:
<u>Pin Digital Waveforms</u>	Restore a minimized Pin Digital Waveforms window.
<u>Pin Analog Waveform</u>	Restore a minimized Pin Analog Waveform window.

Help menu commands:

<u>Quick Help File</u>	Opens the UnoArduSim_QuickHelp PDF file.
<u>Full Help File</u>	Opens the UnoArduSim_FullHelp PDF file.
<u>Bug Fixes</u>	View significant bug fixes since the previous release..
<u>Change/Improvements</u>	View significant changes and improvements since the previous release.
<u>About</u>	Displays version, copyright, bug report email