



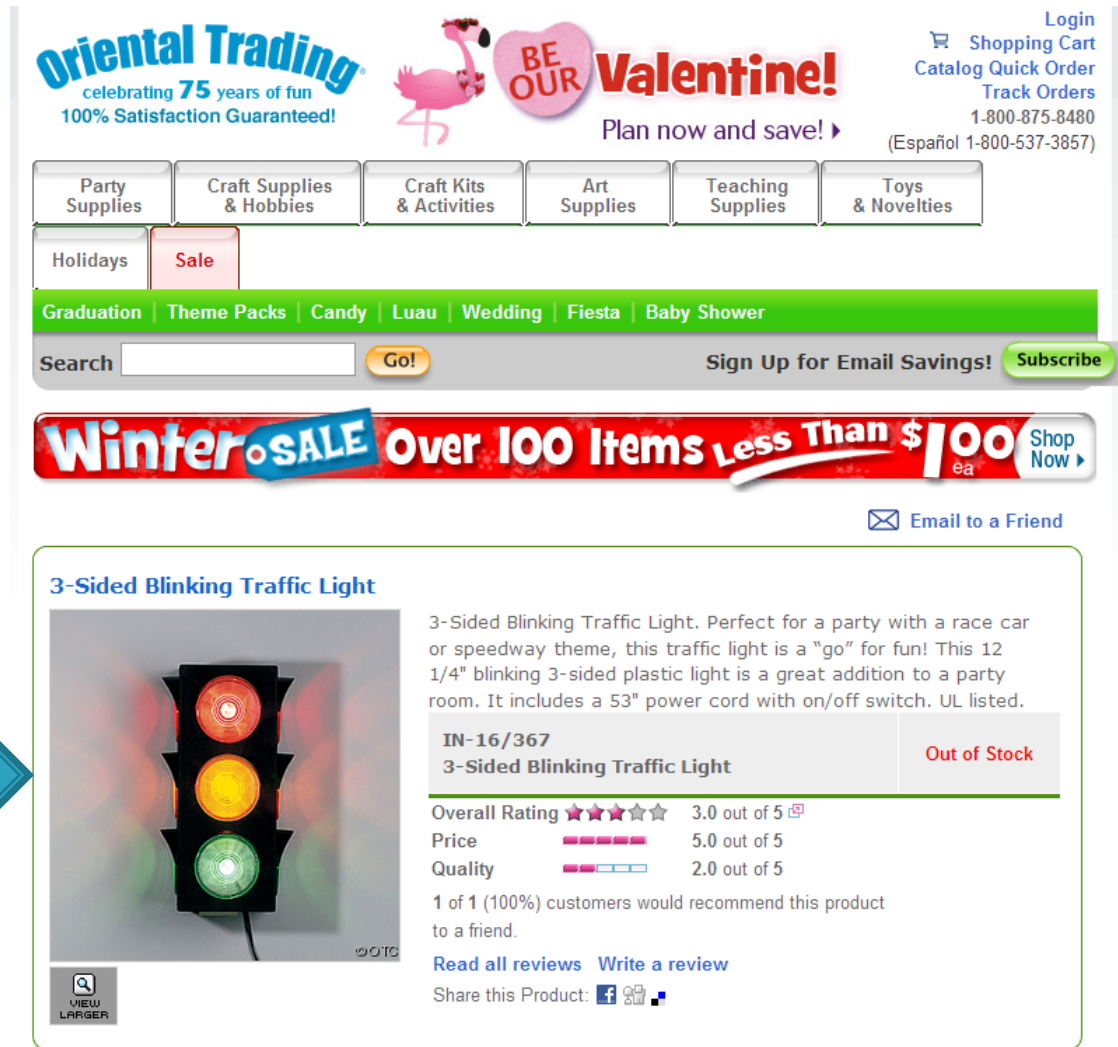
5 Minute Signal

by Mark Smith

mcs@pearlcrest.com

Inspiration

12/21/08



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3-Sided Blinking Traffic Light



3-Sided Blinking Traffic Light. Perfect for a party with a race car or speedway theme, this traffic light is a "go" for fun! This 12 1/4" blinking 3-sided plastic light is a great addition to a party room. It includes a 53" power cord with on/off switch. UL listed.

IN-16/367 **3-Sided Blinking Traffic Light** **Out of Stock**

Overall Rating ★★★★★ 3.0 out of 5 [👤](#)
Price ██████████ 5.0 out of 5
Quality ████████ 2.0 out of 5

1 of 1 (100%) customers would recommend this product to a friend.

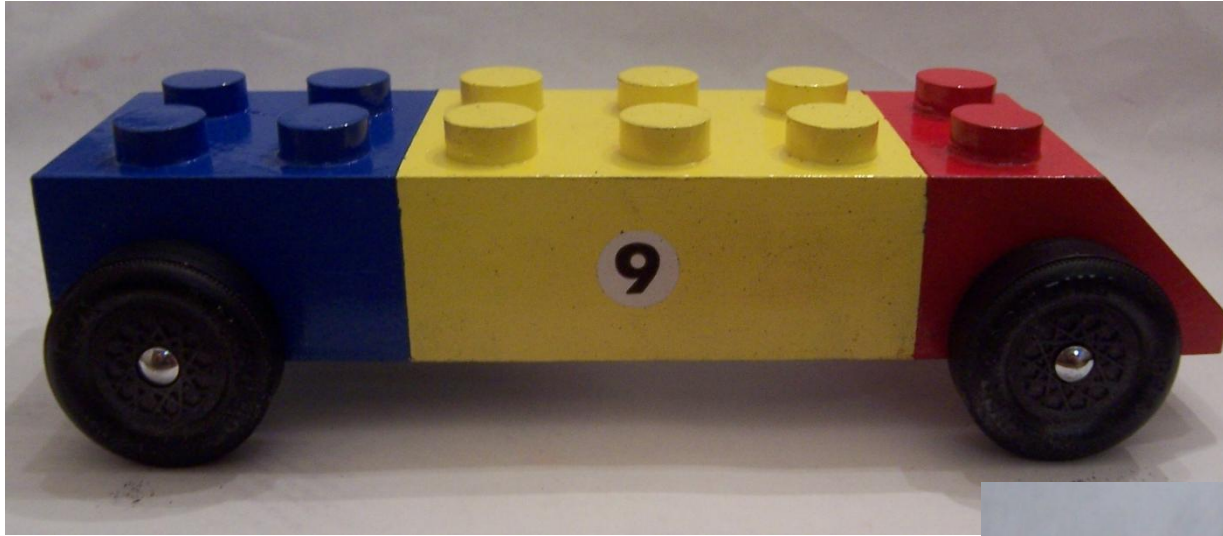
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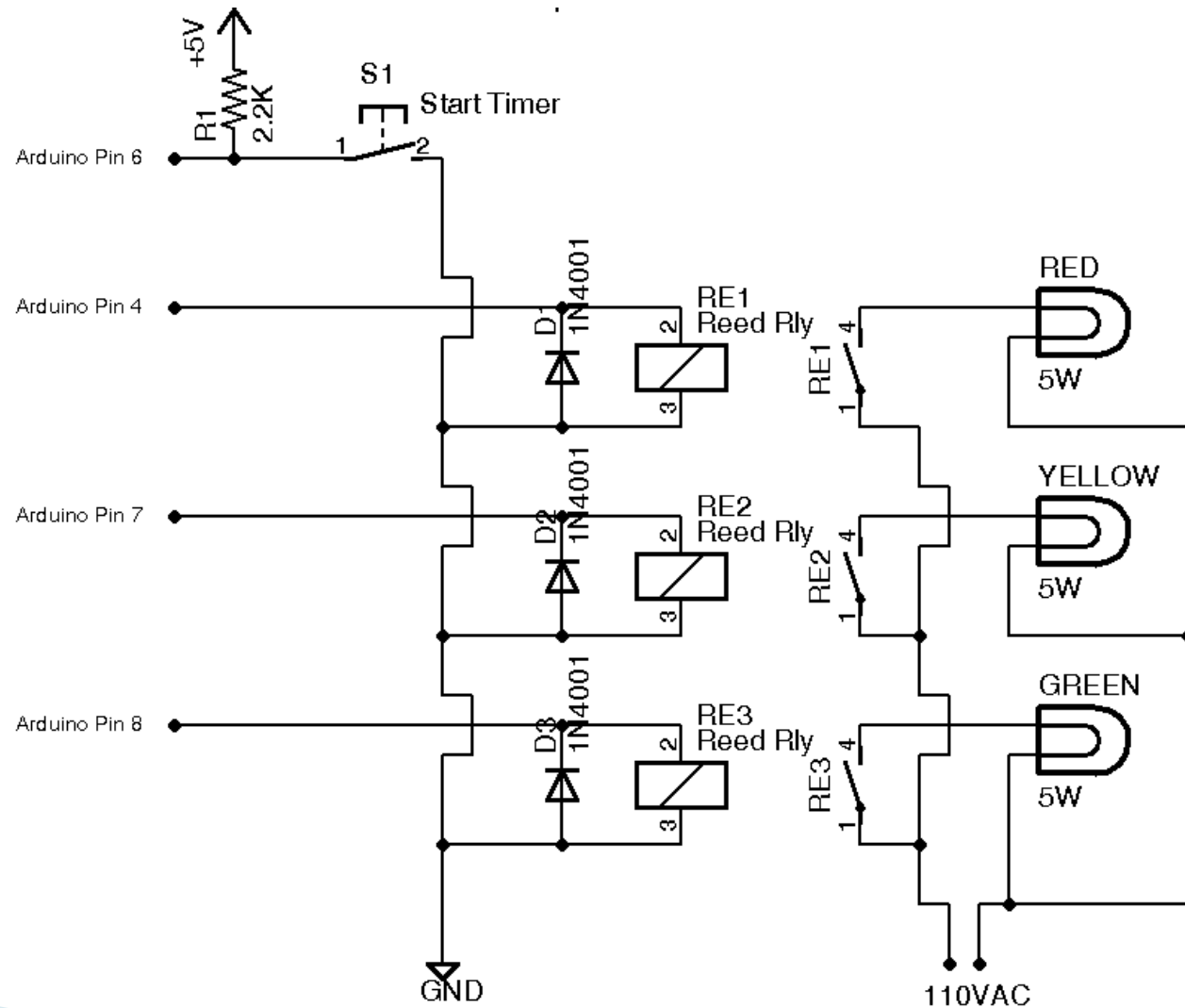
Prioritization

thru 1/9/09



Perspiration

1/10 - 1/12/09



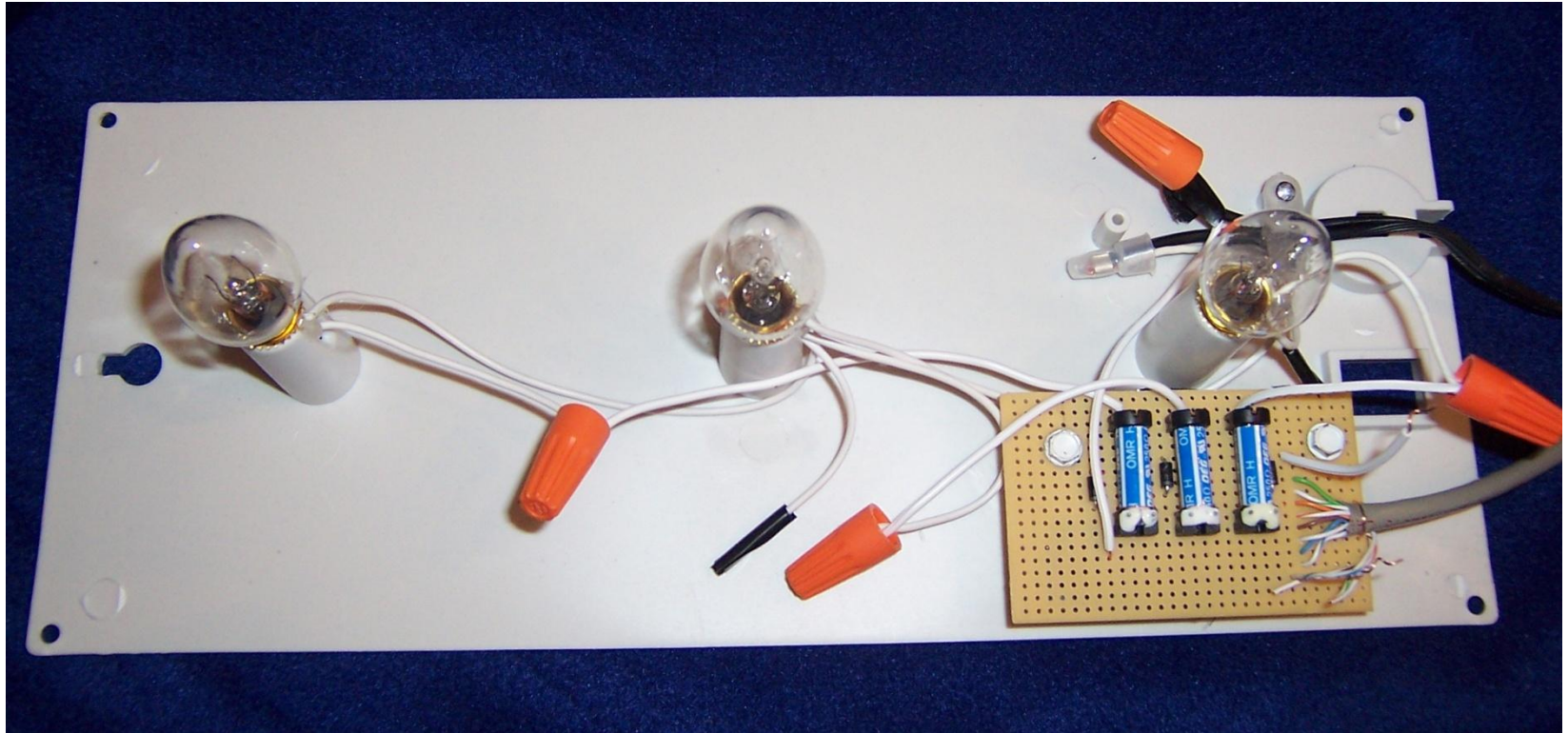
Perspiration

1 / 10 - 1 / 12 / 09



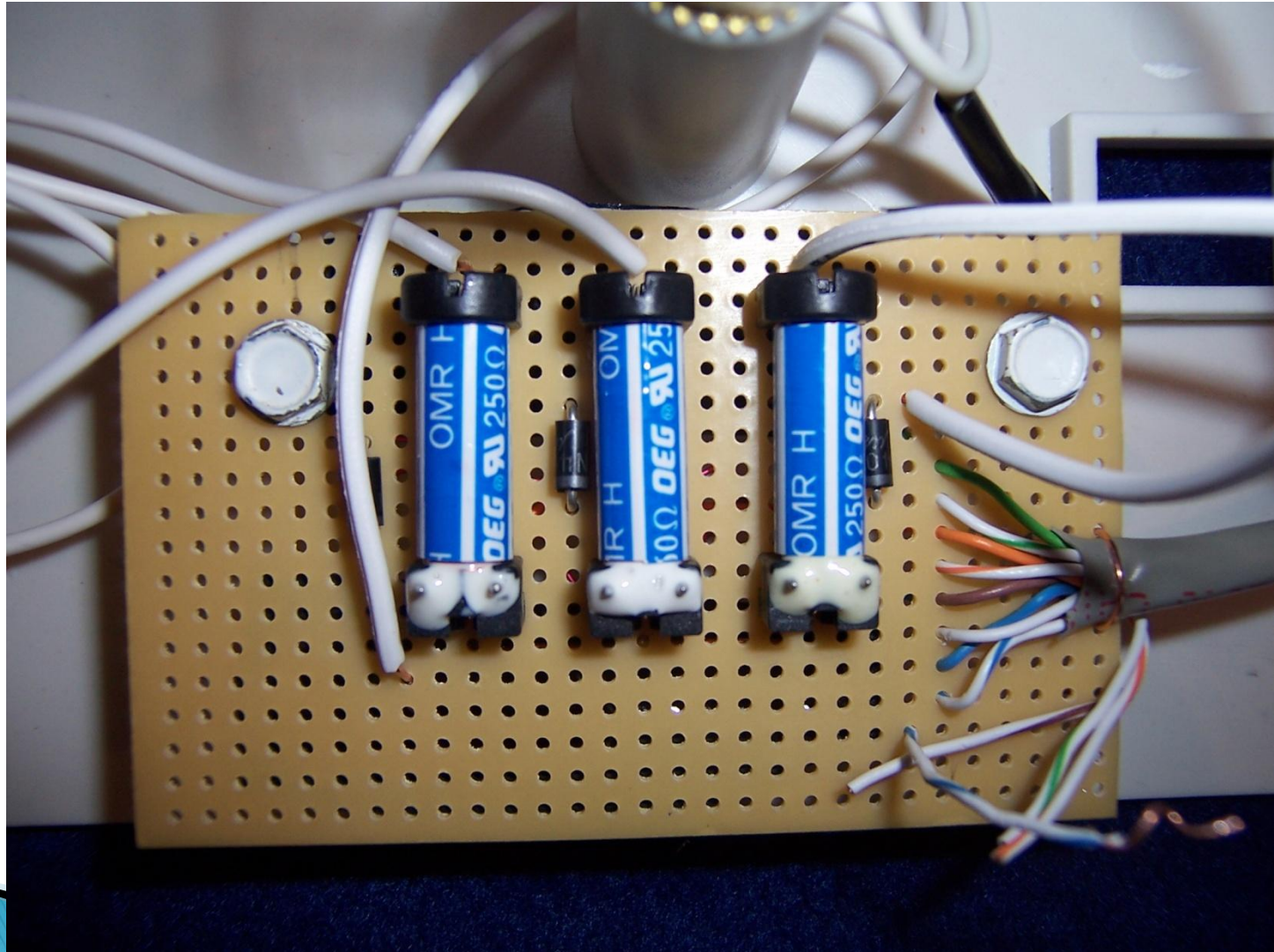
Perspiration

1 / 10 - 1 / 12 / 09



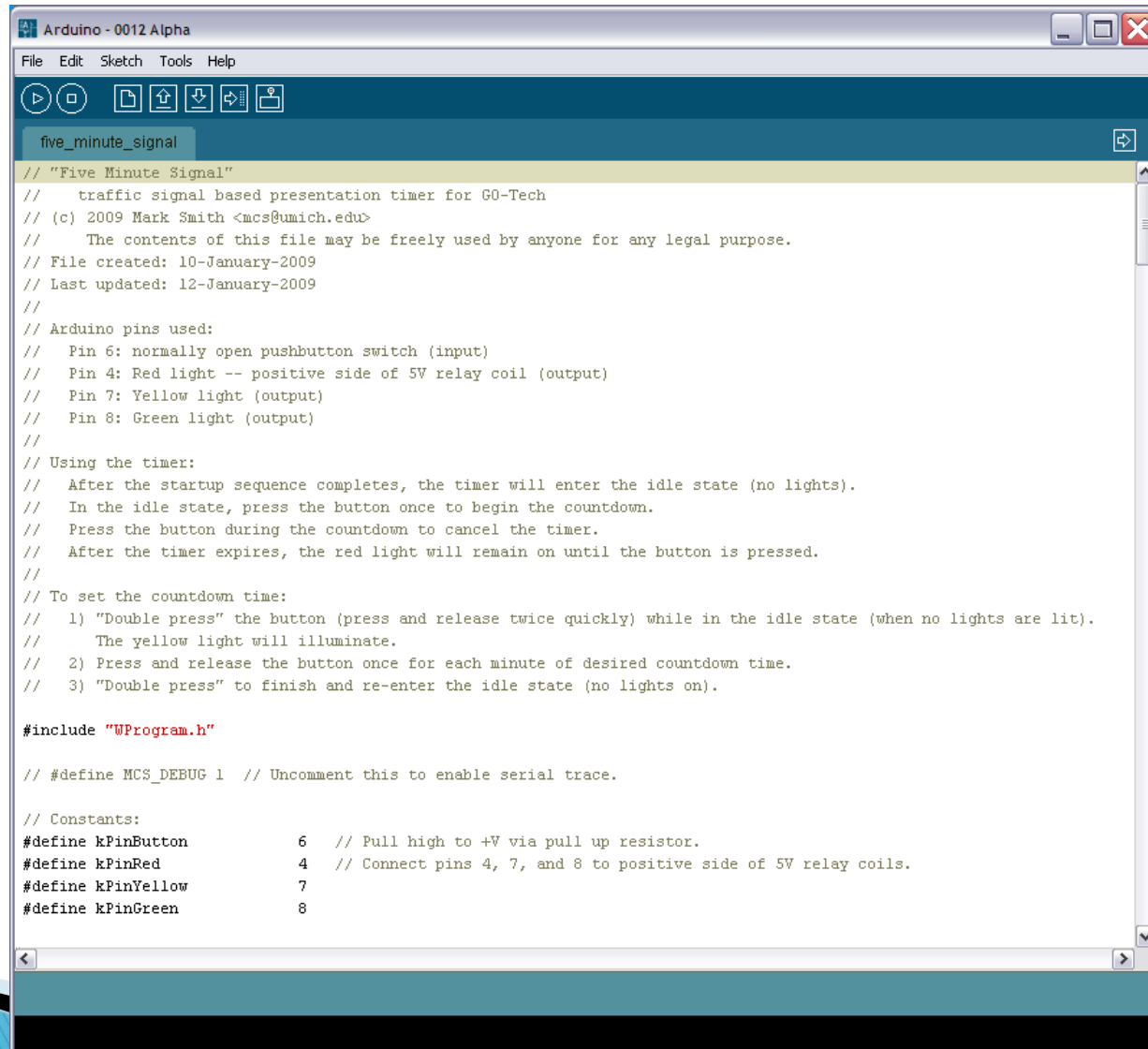
Perspiration

1/10 - 1/12/09



Perspiration

1 / 10 - 1 / 12 / 09



```
Arduino - 0012 Alpha
File Edit Sketch Tools Help
five_minute_signal
// "Five Minute Signal"
// traffic signal based presentation timer for GO-Tech
// (c) 2009 Mark Smith <mcs@umich.edu>
// The contents of this file may be freely used by anyone for any legal purpose.
// File created: 10-January-2009
// Last updated: 12-January-2009
//
// Arduino pins used:
// Pin 6: normally open pushbutton switch (input)
// Pin 4: Red light -- positive side of 5V relay coil (output)
// Pin 7: Yellow light (output)
// Pin 8: Green light (output)
//
// Using the timer:
// After the startup sequence completes, the timer will enter the idle state (no lights).
// In the idle state, press the button once to begin the countdown.
// Press the button during the countdown to cancel the timer.
// After the timer expires, the red light will remain on until the button is pressed.
//
// To set the countdown time:
// 1) "Double press" the button (press and release twice quickly) while in the idle state (when no lights are lit).
// The yellow light will illuminate.
// 2) Press and release the button once for each minute of desired countdown time.
// 3) "Double press" to finish and re-enter the idle state (no lights on).

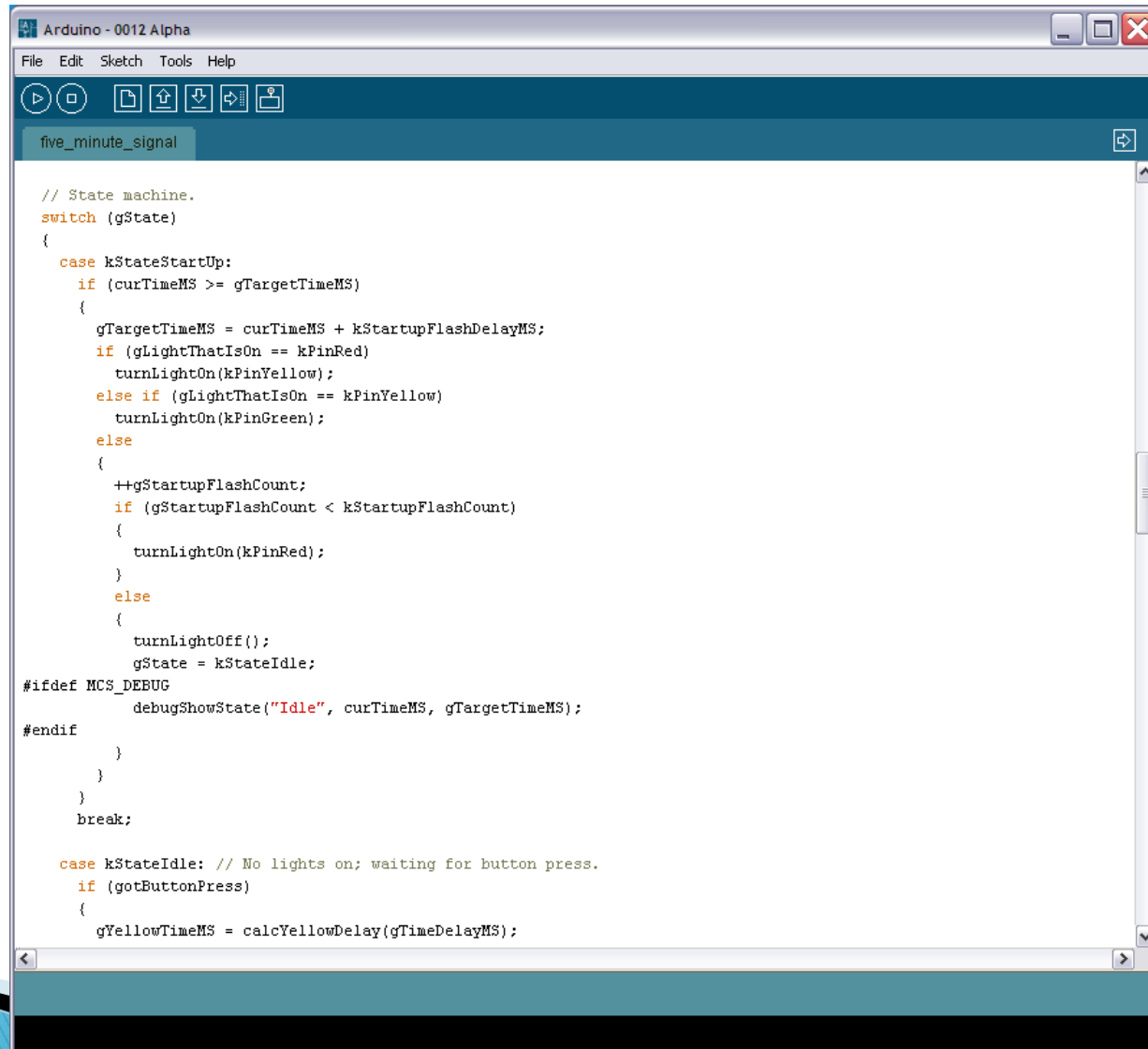
#include "WProgram.h"

// #define MCS_DEBUG 1 // Uncomment this to enable serial trace.

// Constants:
#define kPinButton 6 // Pull high to +V via pull up resistor.
#define kPinRed 4 // Connect pins 4, 7, and 8 to positive side of 5V relay coils.
#define kPinYellow 7
#define kPinGreen 8
```


Perspiration

1 / 10 - 1 / 12 / 09



```
Arduino - 0012 Alpha
File Edit Sketch Tools Help
five_minute_signal

// State machine.
switch (gState)
{
  case kStateStartUp:
    if (curTimeMS >= gTargetTimeMS)
    {
      gTargetTimeMS = curTimeMS + kStartupFlashDelayMS;
      if (gLightThatIsOn == kPinRed)
        turnLightOn(kPinYellow);
      else if (gLightThatIsOn == kPinYellow)
        turnLightOn(kPinGreen);
      else
      {
        ++gStartupFlashCount;
        if (gStartupFlashCount < kStartupFlashCount)
        {
          turnLightOn(kPinRed);
        }
        else
        {
          turnLightOff();
          gState = kStateIdle;
#ifdef MCS_DEBUG
          debugShowState("Idle", curTimeMS, gTargetTimeMS);
#endif
        }
      }
    }
    break;

  case kStateIdle: // No lights on; waiting for button press.
    if (gotButtonPress)
    {
      gYellowTimeMS = calcYellowDelay(gTimeDelayMS);
    }
}
```

Demo

1 / 13 / 09

- ▶ Startup.
- ▶ Countdown.
- ▶ Reset.
- ▶ Set duration.



Extrapolation (in the future)

- ▶ Use a simpler / cheaper μC .
- ▶ Enclose the μC .
- ▶ Improve switch code.
- ▶ Add a remote.
- ▶ Add sound.
- ▶ Anything else?

