
CLOCK

Name: _____ Signature _____

INTRO

You are to design a clock. (The Arduino board contains a quartz crystal timing circuit that is about as accurate as a digital watch.) You can design it anyway you want as long as it meets the following constraints:

- It must display the time at least to the nearest 15 minutes. That is, you can display the normal hour:minute format, or just gradations like 10:00, 10:15, 10:30, 10:45, but just displaying hours is not sufficient.
- It must display time using something more than `serial.println`. The most obvious choice would be to use LEDs. If you want to use something else (a buzzer or whatever) go for it!
- The time must be able to be set either by using buttons or by getting the time from your laptop.

RESOURCES

<http://www.thinkgeek.com/homeoffice/lights/59e0/> shows a cool binary clock.

<http://www.danielandrade.net/2008/07/15/binary-clock-with-arduino/> shows how to implement that design using an Arduino. The problem is that it uses 13 LEDs. I can loan out resistors but don't have that many LEDs (I have a few extra). The design also uses 2 pushbuttons.

<http://www.faludi.com/code/open-source-arduino-clock/> As the link suggests, this is open source clock code for the Arduino.

I cut out all the button code of the above to make a minimal clock that works with the Arduino without doing anything hardware-wise. Code for this minimal clock is at <http://www.zacharski.org/classes/2009/spring/cs305/index.php/Main/CodeForMinimalClock>

A minimal binary LED design might include 6 LEDs (4 for the hour and 2 for the minutes) and 1 button to set the time (15 minute increments).

GRADING

85 points for minimal implementation.

Describe Extension: _____

DEMO

Instructor sign off: _____