

# Shift Register Operation

## Agenda

- Reminder of next Midterm date: Tue Mar 27
- Availability during Feb break
- Review of shift register control signals
- New material:
  - Multiplexing shift registers
  - analogRead() function; conversion to absolute values

## Assignment

- You will find a number of helpful example projects in the course textbook, Beginning Arduino.

## Multiplexing Shift Registers

To multiplex the 7-segment LEDs, we used the Arduino to control the supply of power to each block of LEDs. Since a shift register is an active device, that technique is not suitable.

Multiplexing a shift register (or any other active device) is typically done via the control signals for that device. It is possible to multiplex shift registers by controlling the serial input clock signal.

We'll illustrate the details of this technique using an example on the whiteboard.

## Analog Input: analogRead()

Do you remember the quiz at the beginning of semester about counting text messages? Based on the answers, it's a good topic for all of you to review.

Getting input using the analogRead() function is *not* hard, but there are a few essential things you must do in order to get correct results. The items we'll discuss are:

- integer to floating point conversion (especially in C language)
- resolution scaling factor
- absolute reference scaling factor
- "off by 1" errors

Knowing the difference between resolution and accuracy is also important.