DT228-2 Micros Lab. Interfacing to a seven segment display

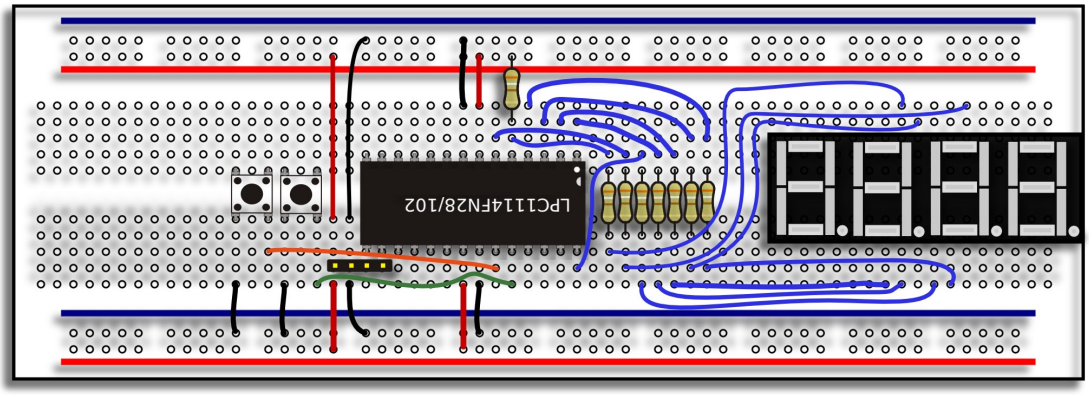
Key topics: Data conversion, multiplexing, digital output control

Introduction.

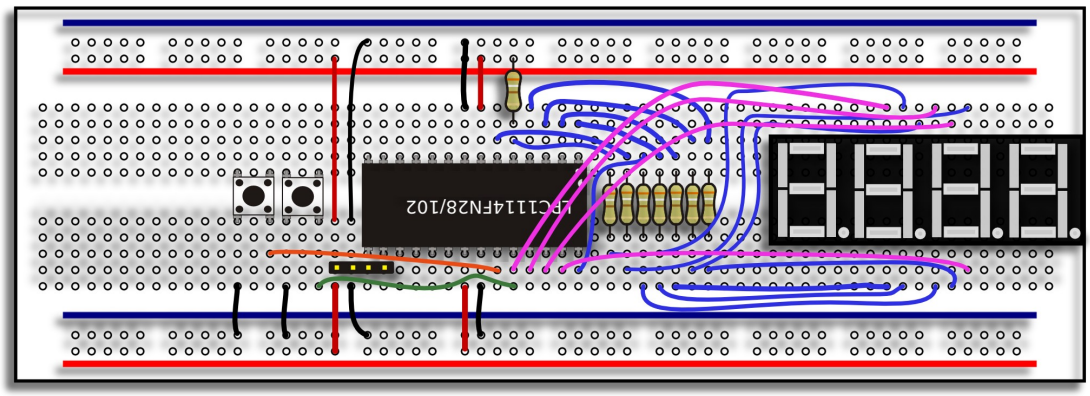
In this lab you will interface a 4 digit seven segment display to the LPC1114. This is reasonably complex and so requires great care when wiring. Try to follow the colour scheme and be neat – it really helps debugging.

Assembly Part 1: Basic chip setup and digit interfacing.

Assemble board as shown below. Be careful to orient the LPC1114 correctly. Ask if you are unsure. The resistors shown are all 390 Ohm



Assembly Part 2: Connecting the cathodes for each digit.



Complete the assembly of the board by wiring the cathodes as shown above.

Programming and testing.

Download **display.zip** from Webcourses and extract to your home drive. Insert the USB to serial converter and determine which COM port it is emulating. Edit **build.bat** in the display directory so that it makes use of this port (look for com9 in **build.bat** and edit). Run **build.bat** and follow the instructions. Hopefully you will see the display counting up. Edit the program so that it counts at a different rate. Edit again to make the program count down.