EGR326 PreLab8 F22

**Another Display- This time using SPI!**

There are 8 SPI ports on the MSP, 4 are shared with a UART and 4 are shared with the I2C modules.

One of the requirements of the project is to display speed both in analog(dial) and digital (7 segment display)

You may have used 7-segment displays by providing a signal to a 3-bit decoder. In this lab you will be able to drive as many characters as you like with only the SPI bus.

Download the LAB8 exercise and the datasheet both found on blackboard. As mentioned in class, SPI is special in that no controller is needed to decode the signals. You can create your own decoding scheme which is what was done with the LED driver chip (MAX 7219).

The MSP SPI port is designed to send out 8 bits at a time. The MAX7219 requires 16. This will only affect the CS pin of the SPI port.

1. Design a schematic that will utilize one of the SPI ports on your MSP. Allow for direct control of the CS pin (you will use it in GPIO mode).
2. Create a high-level software flow diagram showing how you plan to implement the timer described in lab.
3. Provide the following: For a single master/single slave setup- compare the hardware setup of I2C vs SPI.