This assignment should be completed by Wednesday, March 17th. Note: there is nothing to hand in for this assignment. In this homework assignment, you will explore:

- Serial EEPROMs
- I^2C

The required reading for this assignment is available on the course web site.

1. Read pages 1-8, 12, 13 of Microchip Application Note AN536 "Basic Serial EEPROM Operation" and skim the rest.

2. Read Microchip Application Note AN551 "Serial EEPROM Solutions vs. Parallel Solutions".

3. Read the first 4 pages of Fairchild Application Note AN-794 "Using an EEPROM - I^2C Interface".

4. Read the data sheet for the NM24C16 Serial EEPROM.
   - Why is a dummy write required prior to a random read?
   - Why is acknowledge polling (ACK polling, or busy polling) used with serial EEPROMs?
   - During a page write operation, what happens if more than 16 bytes of data are sent to the EEPROM from the master?
   - During a page write operation, what happens if 16 bytes of data are sent to the EEPROM from the master, but the transfer starts at an address in the middle of a page?
   - During a sequential read from an NM24C16, what happens if 2050 bytes are read starting at address 0?

5. [Optional] Read Microchip Application Note AN709 "System Level Design Considerations When Using I^2C Serial EEPROM Devices".
   - How can an internal EEPROM reset be forced by using software? Why would this be important?

   - What data rates are supported by I2C?
   - If two devices start communicating simultaneously, is the transmission lost due to bus contention? Briefly describe how bus arbitration works.
   - What determines the minimum and maximum values of the pull-up resistors used on SCL and SDA?

7. [Optional] Review the Maxim application note "Comparing the I2C Bus to the SMBus".
   - What are the major differences between I^2C and SMBus?