# Goal

The goal for this lab is to familiarize myself with both software and hardware delays. I am to learn the difference between the two as well as any disadvantages or advantages.

# Background Information

Software Delays: A software delay is code that delays the processor. It gives it instructions to execute that stall before the next major instruction is to be executed. They usually look like a while loop.

Hardware Delays: A hardware delay uses specific hardware embedded into the microcontroller. It is nothing more that a binary counter. We can count time based on how fast the counter ticks.

To calculate the COUNTS\_PER\_MS we need to use an equation found in the project2.pdf file. The equation is as follows: COUNTS\_PER\_MS\_2 = (TDELAY\_2 / TDELAY\_1) \* COUNTS\_PER\_MS \_1 (eq 3)

# Plan to Accomplish the Goal

1. Create the c program from listing 6 and the header file from listing 5.
   1. Function one will implement a software delay. (See listing 3 of Project2.pdf)
   2. Function two will implement a hardware delay. (See listing 4 of Project2.pdf)
2. Edit and modify your guess to get as close as possible to 1 mS delays using both hardware and software.
   1. Note: use debugging features like, stopwatch, breakpoints, step into and step over. (See previous labs for more information)
3. Grab screenshots of milestones before you forget what you just did.