CS150 - Computer Organization and Architecture
Homework #5 - Spring 2016

Due on or before Friday, April 15 at 23:59 PST

Figure 1 below contains a C++ program intended to be hosted on the Arduino UNO. This program, when compiled and run, will blink the LED labeled ”L” on your Arduino UNO board with a period of 1 second.

```
/*
This program "blinks" a light emitting diode (LED) connected to a
pin on the Arduino board.  The LED is connected to "pin 13" in this
program because the Arduino board contains an LED that is attached
to the AVR port PORTB[5].  */

const int ledPin = 13;

int ledState = LOW; /* LED state */
long previousMillis = 0;
long interval = 1000; /* blink interval in milliseconds */

void setup()
{
    pinMode(ledPin, OUTPUT); /* set the digital pin as output */
}

void loop()
{
    unsigned long currentMillis = millis();

    if(currentMillis - previousMillis > interval) {
        previousMillis = currentMillis;

        /* toggle the LED state */
        if (ledState == LOW)
            ledState = HIGH;
        else
            ledState = LOW;

        /* set the LED to the new state */
        digitalWrite(ledPin, ledState);
    }
}
```

Figure 1: Sample Program

Your task in this assignment is to build a program in assembly language that will perform the same function as the program shown above. That is, your program should blink the LED labeled ”L” on your Arduino UNO board with a period of 1 second.

Please note that although your program must accomplish the same goal as the program shown above, it is **not** required to achieve that goal by the same means as the program shown above. As long as your program is in AVR assembly language and produces the same result as the program shown above, you have met the requirements of this assignment.

Please name the file containing your program “hw5.asm”. When your program is complete, use the `cscheckin` tool to submit it to your instructor.