ECE-231 Assignment #8.1
Due: 11:59 pm Saturday 4/14/24
Version 1.1

Develop an embedded system that meets the following specifications:

- blink a red LED at a 5 Hz rate when a push-button switch is pressed
- blink a green LED at a 5 Hz rate when a second push-button switch is pressed
- blink red and green LEDs simultaneously when a third push-button switch is pressed
- do nothing (no blinking) when more than 1 button is simultaneously pressed.
- both LEDs off when no buttons are pressed
- Document your code including, at a minimum, a block comment containing source code file name, brief description of the function of the code, your name and date

Notes:

- This is an individual assignment: you must write your own code and not share it.
- Your system should be implemented using C code developed in VSCode, compiled using avr-gcc, and flashed to the ATmega328P MCU on your Arduino UNO development board using avrdude.
- An LED blinking at a 5 Hz rate flashes on and off 5 times per second (on-off-on-off-on-off-on-off-on-off).
- you will need push-button switches, LEDs, resistors, a breadboard, and wire jumpers in addition to your Arduino Uno board and USB cable for this lab.
- feel free to use the built-in LED on your Arduino Uno for developing, testing, and debugging your code, but your submitted projects should have external LEDS and switches installed on a breadboard
- Sections 7.1 - 7.3 from the course textbook, Mazidi, Naimi, and Naimi's, The AVR Microcontroller and Embedded Systems, wil be helpful for this assignment.

What to turn in:

- ~~During your lab session, demonstrate partial functionality such as blinking LED's without switches, along with your source code to your TA.~~
- By Saturday 11:59 PM on 4/14/24, upload a video to Moodle (typ 10-15 seconds long) showing your functioning system.

Grading rubric:

~~Lab Session: 20%~~
Moodle Submission: 100% for a working system. Partial credit for a partially working system.

This is version 1.1 of this document, updated 4/9/24 by D. McLaughlin