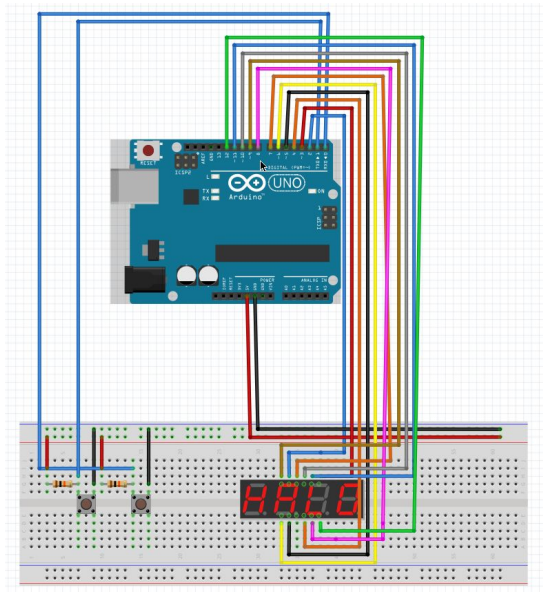


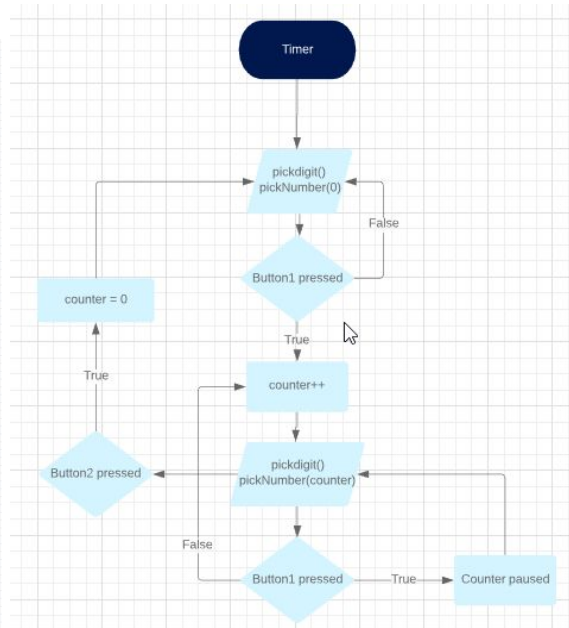
Electronic Device Development

4 digit seven segment stopwatch

Circuit Diagram



Flow Chart



Instructions

I have used multiplexing to control a 4 digit 7 segment display, the buttons use a pullup resistor to stop them bouncing.

To start the timer press button 1 and the timer will begin counting.

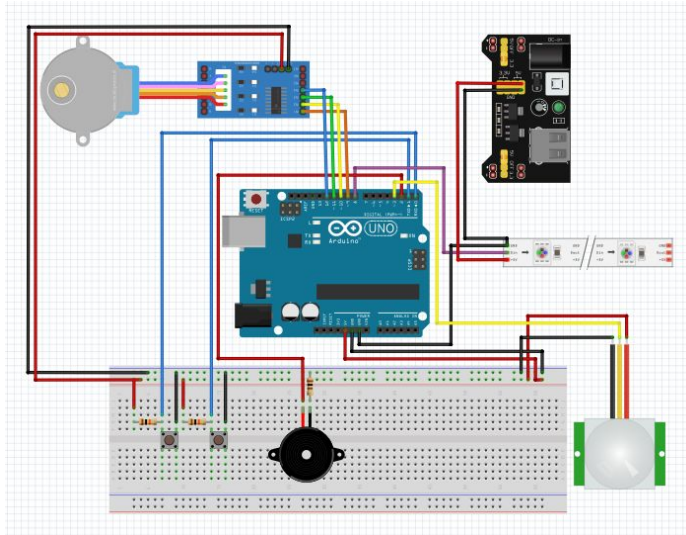
If you would like to pause the timer press button 1 again and the counter will stop.

If you would like to reset the timer press button 2 at any point to set the counter to 0, the timer will pause on 0 awaiting you to press button 1 to begin counting again.

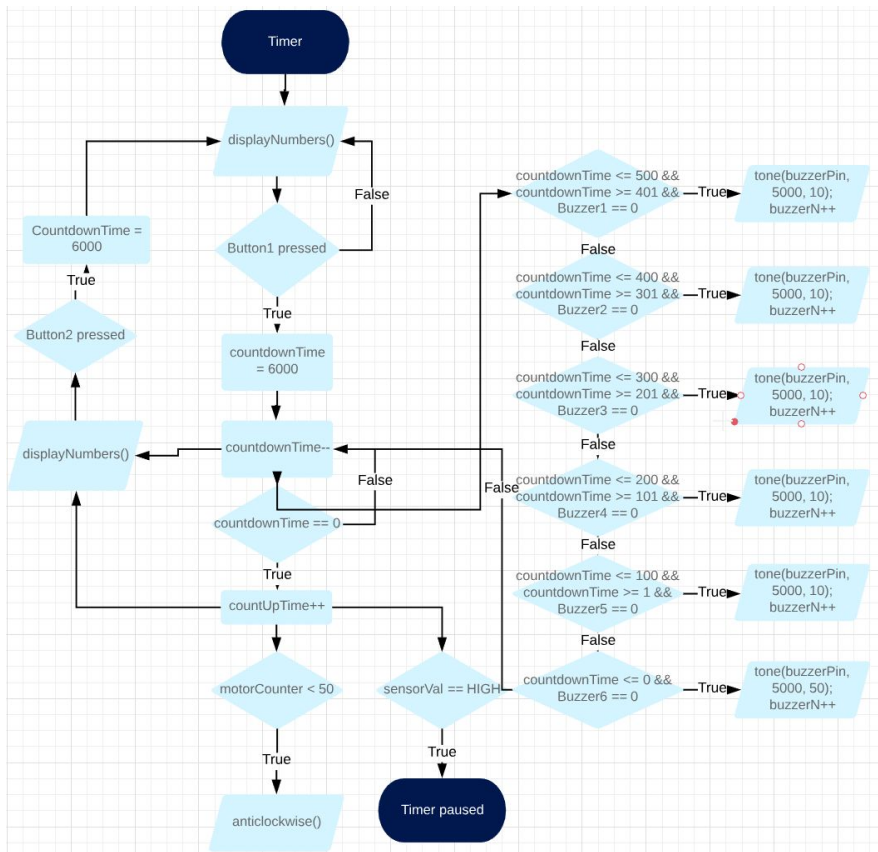
I have used a neopixel LED strip powered by an external power supply to create a large display. To start the timer press button 1 and the timer will begin counting. If button 1 is pressed again the timer will pause until the button is pressed again. If button 2 is pressed then the digits get set to 0 and the timer resets to 0 where it shows the paused screen until button 1 is pressed.

Timer for cycling time trials

Circuit Diagram



Flow Chart



Instructions

I have used a buzzer to generate the noise, a stepper motor to simulate the gate opening and a motion sensor to detect movement and stop the timer.

To start the timer press button 1 and the timer will begin counting down.

When the timer reaches 5 seconds the buzzer sounds once per second and then at 0 a longer buzz sounds. At 0 the stepper motor rotates and the timer begins counting up, if the motion sensor is triggered the timer stops.