ME331 Project 1

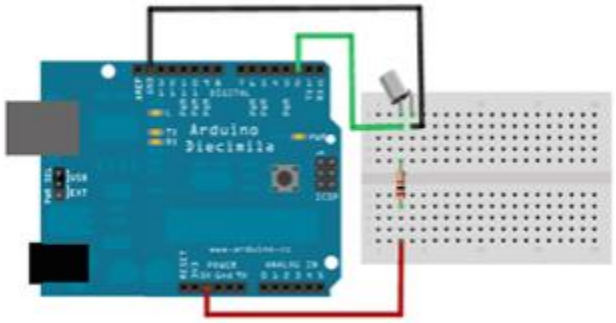
Overview:

In class 2b, we used a pulldown resistor with a tilt sensor, wired to an LED. The tilt sensor read HIGH when the switch was closed (not tilted). Because of this, our LED was lit when the tilt sensor was not tilted, and turned off otherwise.

In this project, you will use a pullup resistor instead. Instead of directly wiring the LED to the sensor, we will use code to light two LEDs-- one color for tilt and one color for not tilted.

Steps:

1. Review the material for week 2a/b, including Ladyada: tilt sensor
2. Wire the circuit as shown in the ladyada tutorial for a 10KΩ pullup resistor



3. Add code to read the tilt sensor. Verify that it works, using the serial monitor. You should show “NO TILT” for not tilted and “TILT” for tilted. Note: you do not need to include the debouncing code that is shown in the lady ada example.
4. Add two different color LEDs to your circuit (red and green). Wire them to different pins on Arduino. Don’t involve the tilt sensor circuit—they should be independent.
5. Add code to turn on one color LED (green) only when the sensor is not tilted, and turn on the other color (red) only when the sensor is tilted.
6. Once everything is working, remove the 10KΩ pullup resistor, and use the Arduino built-in pullup resistor instead, as in the sample code

On Blackboard, submit:

1. the sketch (.ino file)
2. a video of your Arduino circuit running the sketch, including the serial monitor. Ensure your video clearly demonstrates the successful implementation…narration helps