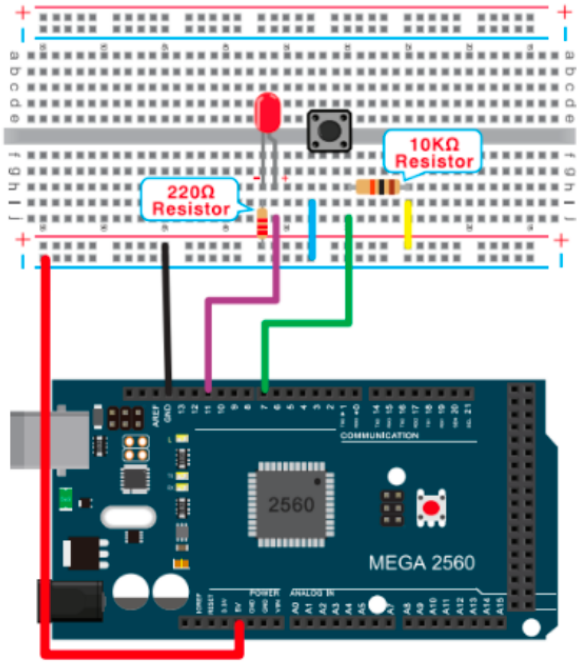
CpE 4010 Lab 3

- Objective: To have the student experiment with a simple IO circuit wherein a button click represents our “sensed” input and an illuminated LED represents our “actuated” output.
- Procedures will be highlighted in red boxes; some procedures require you to collect data for your report. Enter all required data in the appropriate field within the accompanying Datasheet. Also, be sure to enter your name at the top of the Datasheet.

• Once you have completed all of the following procedures and filled in your Datasheet, upload your complete Datasheet to the “Lab 3” folder under “Assignments”

1) Browse to the following website and construct the “Button-controlled LED” circuit
https://wiki.keyestudio.com/052043_Super_Learning_Kit_for_Arduino#Project_6:_Button-controlled_LED



2) Copy and paste the sample code into your IDE code window, then compile, upload, and run the program
Test the program by pushing and releasing the button

3) Modify your circuit by adding a green LED, which will require a separate IO pin from the one used by the red LED.
Take a picture of your modified circuit and insert it into the associated section of your Datasheet

4) Modify the sample code such that pressing the button lights the red LED, whereas releasing it lights the green LED. Then modify your code again such that the first press of the button lights the red LED for one second—releasing it lights the
green LED for one second; the second press of the button lights the red LED for two seconds— releasing it lights the green LED for two seconds; and so on up to five presses and reset the cycle.

5) **Take a screen shot of your running program along with the IDE code window and insert it into the associated section of your Datasheet**
6) **Take a picture of your running circuit showing the green LED illuminated and insert it into the associated section of your Datasheet**
7) **Write a conclusion in the "Conclusions" section of the Datasheet explaining your observations and lessons learned**