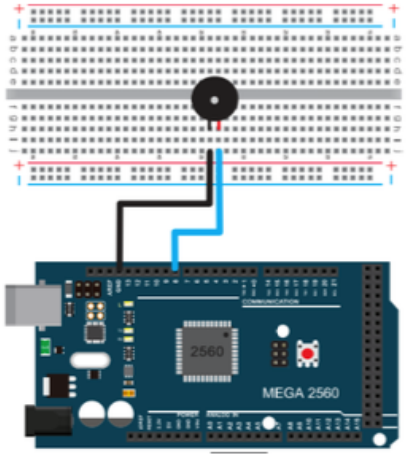
CpE 4010 Lab 5

- Objective: To have the student experiment with a simple integrated potentiometer & piezoelectric buzzer circuit wherein a potentiometer rotation represents our “sensed” input and the corresponding buzzer tone represents our “actuated” output. You will also print the current frequency to the Serial Monitor
- 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 5” folder under “Assignments”

1) Browse to the following website and construct the “Passive Buzzer” circuit

https://wiki.keyestudio.com/052043_Super_Learning_Kit_for_Arduino#Project_8:_Passive_Buzzer



2) A) Copy and paste the sample code into your IDE code window, then compile, upload, and run the program.
   B) The oscillating-tone program should start automatically

3) Modify your circuit by adding a potentiometer for input as in a previous lab
   A) Take a picture of your modified circuit and insert it into the associated section of your Datasheet

4) Modify the sample code such that changing the potentiometer between the two extremes will produce output tones in the range of 60 to 10,000 Hz. Also, print the current frequency to the Serial Monitor. For example, the displayed message might say “Frequency is 100 Hz.” Hint: Use the delayMicroseconds() function.

5) **Take a screenshot of your IDE code window displaying the modified source code and insert it into the associated section of your Datasheet.**

6) **Take a screenshot of your Serial Monitor window displaying several frequency messages and insert the screen shot into the associated section of your Datasheet**

7) **Write a conclusion in the "Conclusions" section of the Datasheet explaining your observations and lessons learned.**