Week Two: Arduino Circuit Project

Objective

The objective of this project is to familiarize yourself with the components we will be using throughout the class. This project is intentionally loosely defined, and you are encouraged to challenge yourself and think outide the box to create a circuit that accomplishes a task.

Project Guidelines

Create a circuit that accomplishes a task using the following circuit elements
- power source
- breadboard
- resistor(s)
- button (as a sensor)
- LED (as an output)
- one or more components from the following list
  - microphone
  - thermistor
  - light sensor, IR sensor, photocell
  - capacitive touch sensor
  - magnet sensor, reed switch
  - DC motor
  - solenoid
  - amplifier
  - transistor
- a microcontroller (Arduino)

Task Map

In addition to your circuit, you will be asked to submit a task map, which details how you plan to use each component to accomplish your task. This should be similar to a flow chart, with interactions between components clearly defined. This is separate from the schematic.

Documentation and Submission

Be prepared to present your circuit in class on Friday 07/07. As soon as it starts to work, get some photos and video. When the final version works, take a video. Hopefully it still works in class, but you can always fall back on the video if something breaks in transit.

Final submission should include your task map, a schematic diagram of your circuit, your code, pictures and videos of your working circuit, and any other artifacts that show the process.

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	20 points	15 points	10 points
Use of Elements	Project uses more than the minimum number of required elements.	Project uses the minimum number of required elements.	Project does not use the minimum number of required elements.
Task Map	Project task is well documented in the form of a map which includes the desired task to be completed and outlines in detail how the components will interact.	Project task is defined and there is documentation that mentions all of the components that will be used to carry out the task.	Project task is loosely defined and there is little to no documentation that shows evidence of planning.
Code	Code is well organized and easy to follow. Comments are made wherever necessary	Code is a bit difficult to follow and is not well commented	Project is turned in without the code.
Documentation	The process is well documented including a schematic, pictures, videos, drawings, and/or any other physical artifacts that were creating during the course of the project.	The project is submitted with little documentation that details the process and final output.	The project is submitted without any supporting documentation.
Composition	Circuit is neat and well thought out. It is clear that time was taken to organize the components in a logical manner.	Circuit is readable, with some effort. Wires are cut to size.	Circuit is disorganized and difficult to follow. Wires are tangled or extremely long.