**Project Statement/Goal:**

My goal in this project is to create a box that requires you to complete a set of tasks in order to be able to open the box. In order, the person must be able to:

1. Enter a 6-digit passcode that matches the pre-coded code in order to progress (if the person enters the correct code, the first LED will turn on. If the person enters an incorrect code, the light will blink 3 times and start over)
2. Have the box reach a certain temperature in order to progress (once the temperature read from the sensor reaches the goal, it will turn on the second LED)
3. A binary code will be displayed on 4 LEDs based on the current temperature upon reaching this step. The user must use the keypad from the first puzzle to input the decimal representation of the binary number being represented on those LEDs
4. The user has completed all of the puzzles the box has to offer, they must now press the button that will allow the box to be opened.

After completing the 4 tasks above, a servo will pull on a latch that it is attached to and allow the box to be opened to access whatever is inside. The box will be powered by batteries that have a pack attached to the back of the box. If the user wants to reset, there will be a button on the keypad mapped to reset the program when pressed.

**Circuit Diagram:**

**Bill of Materials:**

* 1x (Membrane 4x3 Matrix Keypad)
* 1x (Membrane LED Keypad)
* 1x (TMP36 – Analog Temperature Sensor)
* 1x (Micro Servo with 3-pin JST PH 2mm Cable)
* 1x (4x AA Battery Holder with 2.1 mm Plug)
* 7x (LEDs, 4x Red, 1x Green, 1x Blue, 1x Red Clear)
* Metro Board
* Breadboard
* 7x Resistors
* Cables
* Latch
* Wire for connecting servo to Latch
* Box that can be locked with a latch