A Jack in a Box

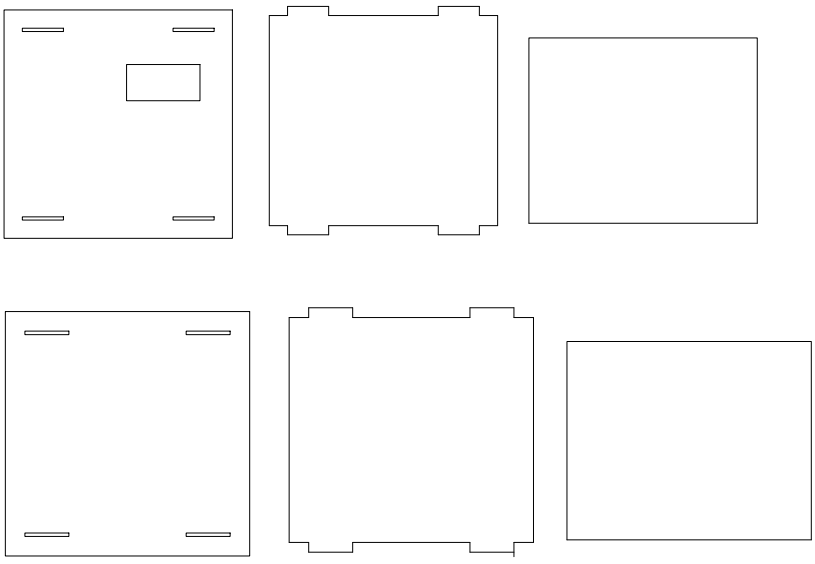
1. Description of the device's design

In this design project, I made a *Jack in the box* with a flower rising when the box is open.

The idea is to use potentiometer to control the servo and the servo will manipulate the leverage to open or close the box. To prevent the box from being wildly opened, the range of the potentiometer maps from 0 to 110 degrees. In this way, the box will be able to successfully close.

To build this device, the box was drawn by the *Autodesk Inventor* and printed on the acrylic by laser cutter. And for the control circuit, a servo and potentiometer are used.

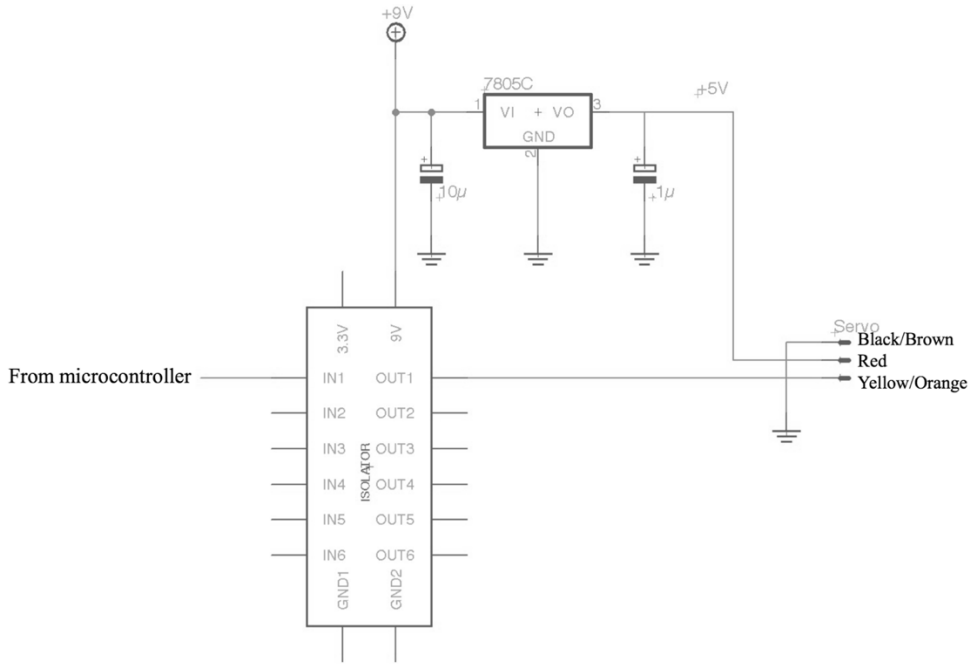
- The drawing of this box is shown below.



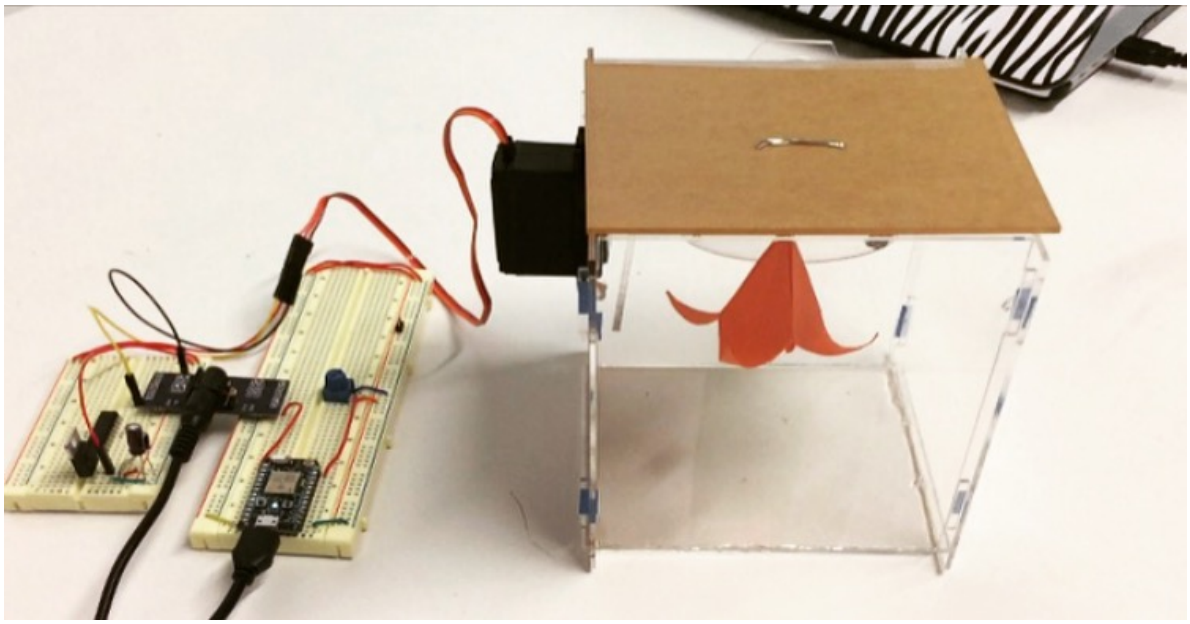
To reduce the chance of using glue, the slots are carefully calculated by the

thickness of the acrylic board and also the size of the servo.

- The schematic shown here:



- Layout of the circuit and the box outlook



2. Code

The code for the device is in the folder named *jack_in_box_code.ino*

3. The video can be retrieved here:

Video: https://youtu.be/YjDViScWYTE