ENGI 301

Automated Jewelry Box Proposal

<2/19/2024>
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Motivations

I like making gifts for my Mom's birthday, such as the 3D printed rose pictured to the right.

I have not done it in a while, so I feel this project would be a nice little gift.
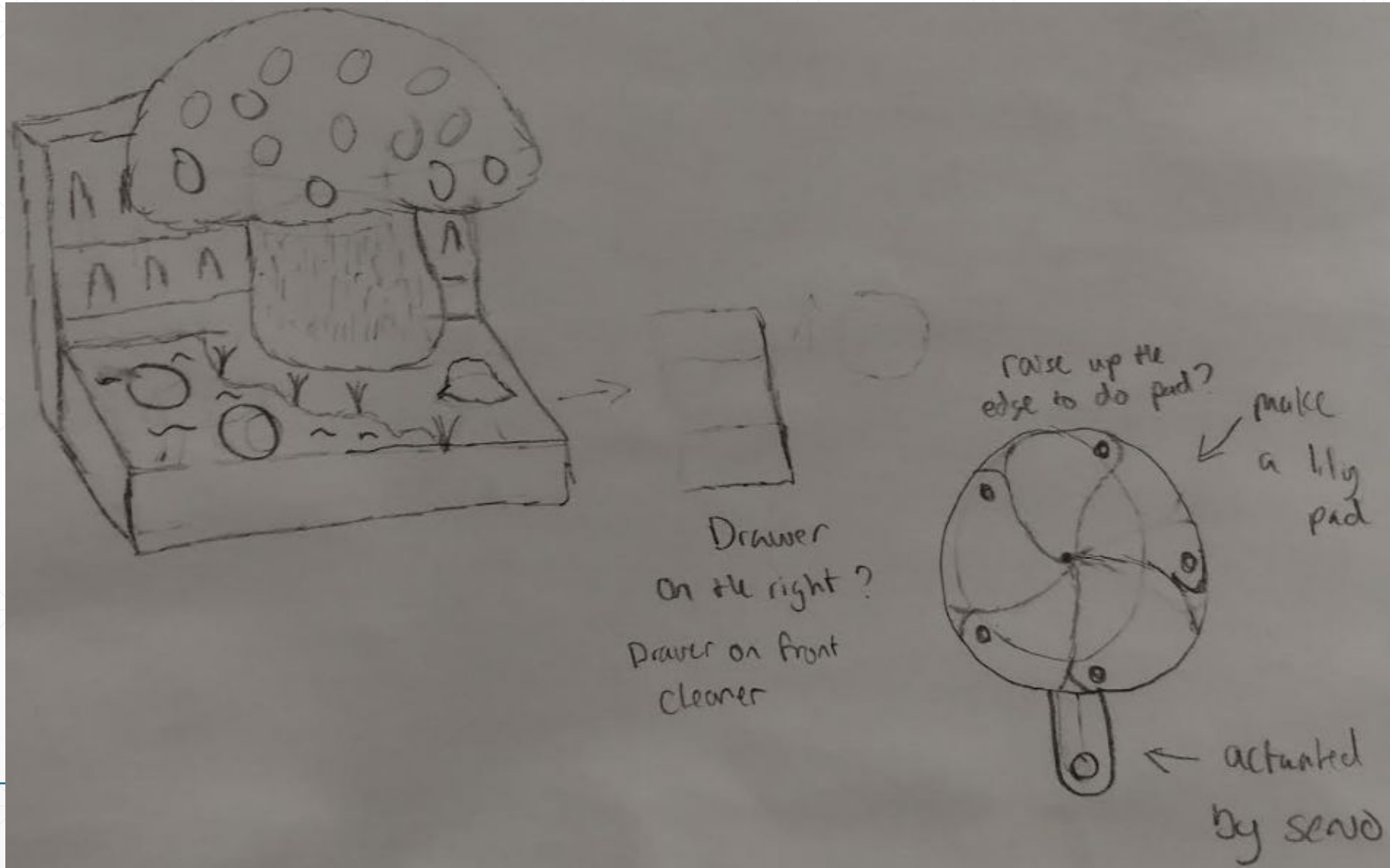
Inspiration

Sketches of Potential Design

Sketches of Potential Design

Proposed Improvements

- Custom and Controllable Lighting
- Motorized Mushroom Head for Jewelry Selection
- Limit Switch to Help Conserve Power for Ring Box

System Block Diagram
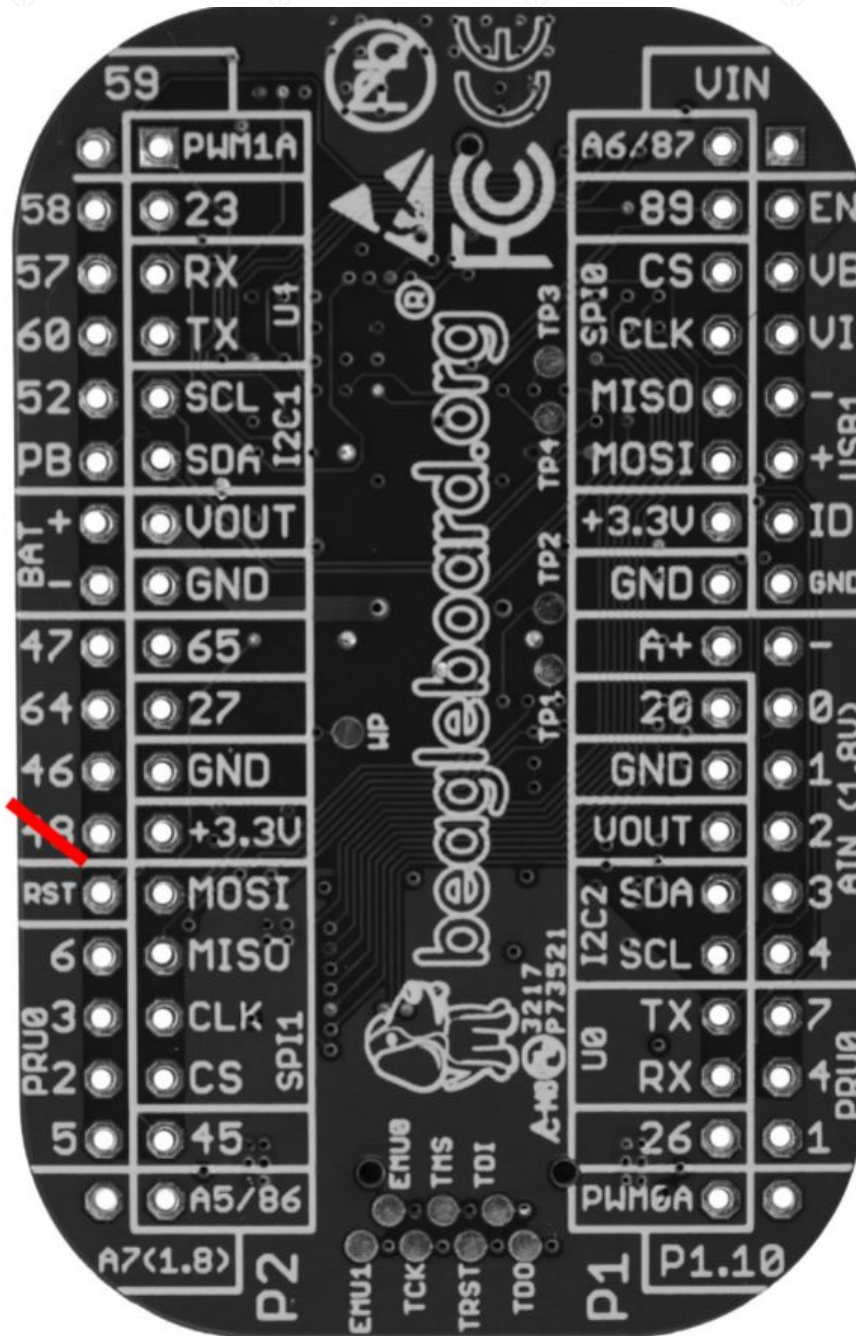
Motorized Jewelry Selection

Stepper Motor
UART4_RX (P2_05)
UART4_TX (P2_07)
GPIO (P2_09)
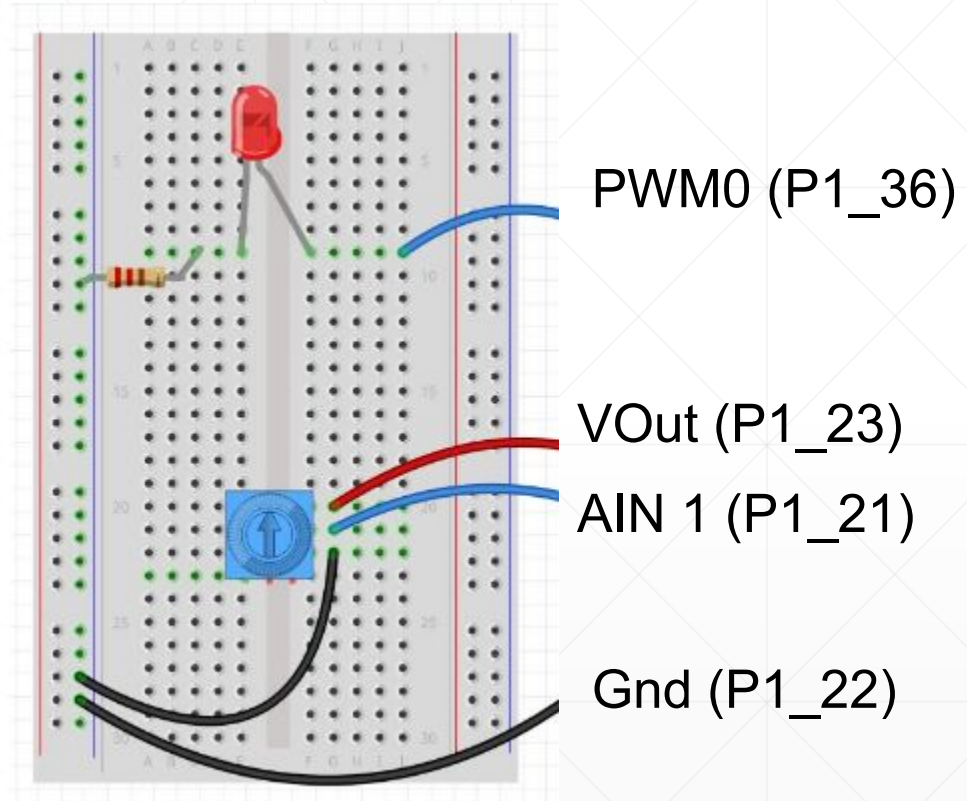SPIO_CS (P2_31)
3.3 V (
GND (

Adjustable Light Control

AIN 1 (P1_21),
 VOut (P1_23),
Gnd (P1_22),
PWM0 (P1_36)

Fairy Light Control System

PWM0 (P1_36)

VOut (P1_23)
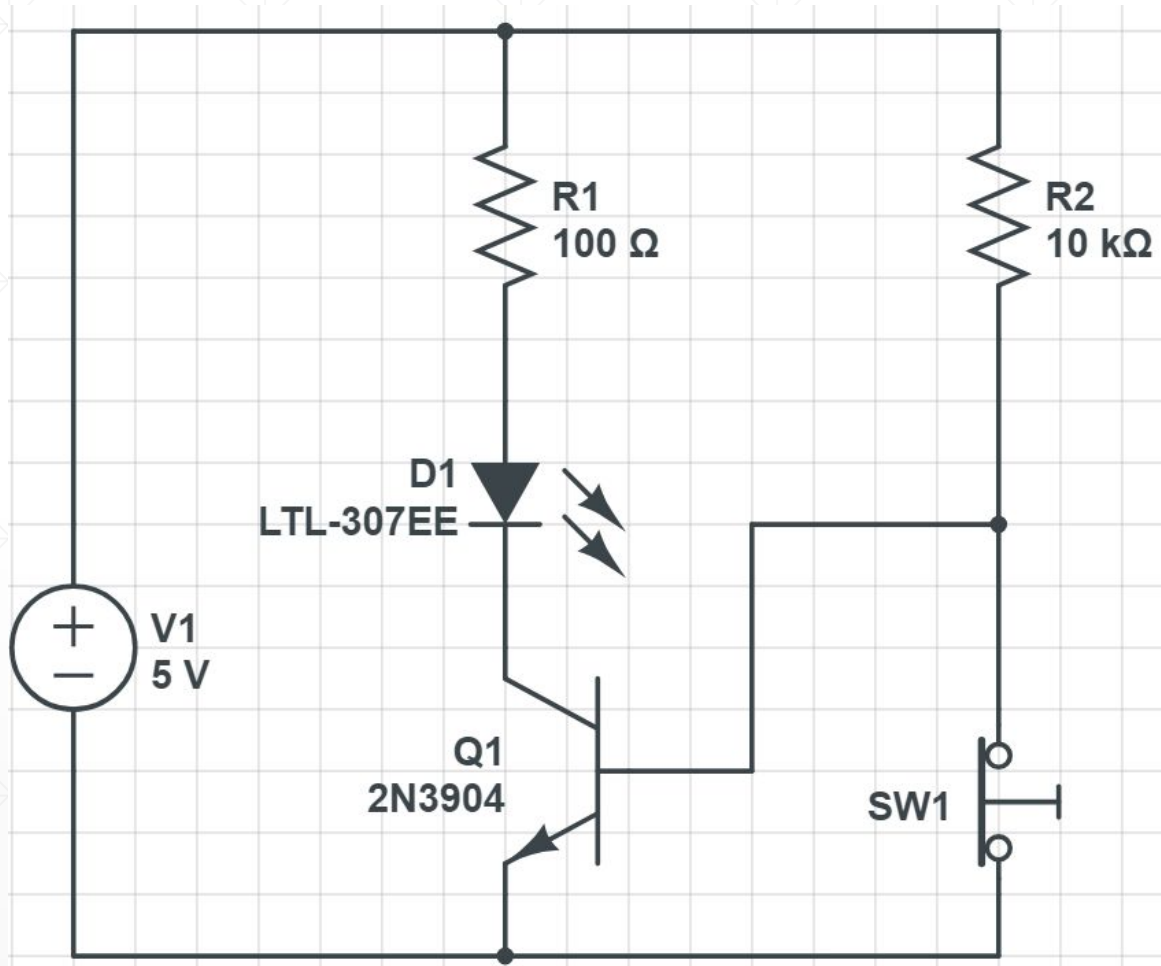
AIN 1 (P1_21)

Gnd (P1_22)

Fairly Lights

Change Color

Dimming Knob

On/Off Switch

Ring Box Light Control System

When connection is broken, led placed inside the container will be turned on.
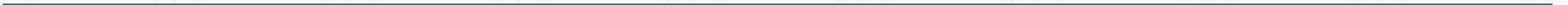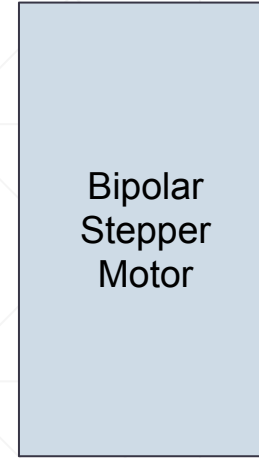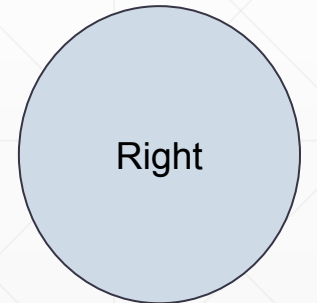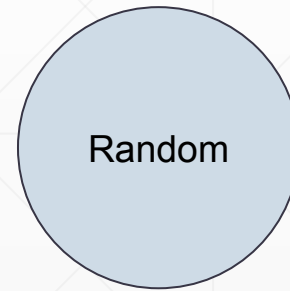
Look into Limit Switch

Jewelry Selection System

Power Block Diagram

Bipolar
Stepper
Motor

3.3 - 5V
1.5 A

Fairly Lights

4.5V
? A

Components / Budget

Component	ENGI301 to Buy?	Cost
Fairy Lights	Y	6.00
Battery Holder	Y	10.00
Stepper Motor	Y	15.00
Limit Switch	N	

See Next Slide for Instructions