# Rotating Mount

## Overview

This is a creation with a weighted base and interchangeable rotating mount on top. Its primary purpose is to continuously rotate a flag or small ornament at 2 different speeds, making for a fun desk decoration.

## Demonstration

Rotating Mount Demonstration

## Ideation

### Initial Idea

Initially I was going to make a small rotating mount glued to pride flag, but I then realised this prevented me from interchanging flags and being able to easily replace parts if necessary. I also started out with the idea to give only a single option for the speed of rotation.

### Final Idea

I ended up making a rotating mount, rather than a rotating flag, so I would be able to swap the flags out and attach other small ornaments to it. It also has 2 speeds of rotation.

## Development

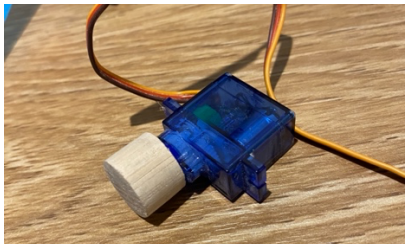
### Equipment & Parts

The following equipment was used to create this artifact:

- Tools
    - Multi-meter
    - Soldering Iron
    - Soldering stand and sponge
- Parts/Materials
    - Breadboard
    - Electrical tape
    - Wires
    - 9V Battery
    - 9V Battery Clip
    - Solder
    - Micro servo
    - 3-pole toggle switch
- PPE
    - Safety glasses

## Box Development

To create the box for this artifact, I repurposed a cardboard box from some LED bulbs I had in the house.
I then cut out a hole for the servo motor to poke through.
Using a piece of dowel and a drill, I made small holes on each side of the dowel, one to fit onto the micro servo, and the other to mount a flag or small ornament on.



Finally, I spray painted the box and mount piece black inside and out.

## Circuit Development

Below is a diagram of the circuit used to create the electrical components of this artifact.

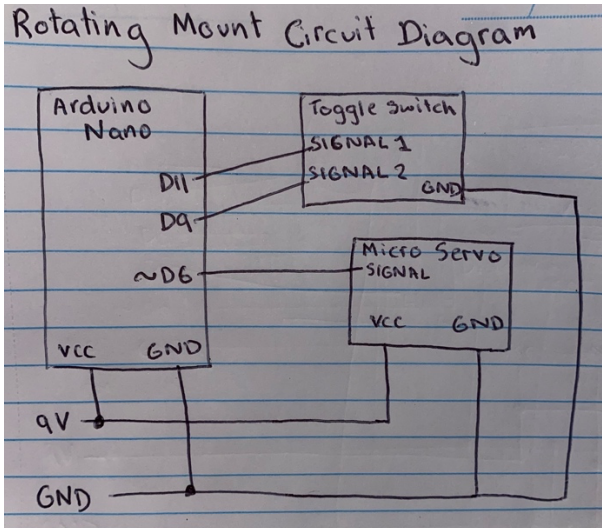
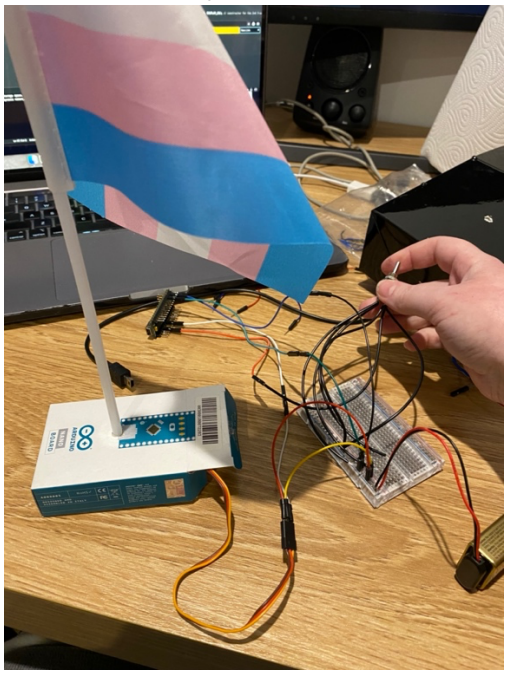


*Photo of circuitry*



Software Development

The Arduino software used to control the electrical component of this artifact can be found at the following link.
Microcontroller Code

## UX Considerations

Various user experience (UX) principles were considered during the creation of this artifact to ensure that the product is easy to use, fix and extend in the future.

- I made sure that I housed the internal circuitry in a box with an opening so I can easily access the battery and parts to replace them if needed
- I positioned the heavier components (e.g. battery) on opposite sides on the box to ensure the base was heavy enough to hold any small ornament in the mount without tipping over
- I opted for a 3-pole toggle switch over a 2-pole toggle switch to allow for a choice between two speeds of rotation

## Aesthetic Considerations

Various aesthetic considerations influenced the creation of this artifact to make the artifact look as polished and complete as possible.

- I spray painted the box and wooden mount piece black to maintain a neutral look, allowing whatever flag or ornament attached to the mount to stand out
- I hid the wiring and power source in a cardboard box to avoid visibility of wiring and parts
- I attached the toggle switch to the box by securing it with a bolt on one side, to achieve a flush and neat connection