1) HSV is typically better as it does a more accurate job of color tracking regardless of shade/brightness. The threshold range that I used, with the color blue, was lower_blue = [90, 50, 70] and upper_blue =[128, 255, 255].

2) Turning on a flashlight on an object made the blue brighter which made the tracking worse as it was overexposed. In addition, turning off the lights made the color of the blue less vibrant which caused the tracking to be quite poor and be out of the range of our threshold.

3) I thought that changing the brightness helped and hurt with how the code was tracking the color. For example, turning it up, made the blue more visible for the code to track which helped overall however, turning it down made the color more gray/black which made the tracking bad, and had a hard time recognizing the color.

4) I used a packet of gum to track the dominant color. The gum packet was more robust to light in comparison to the phone. This is because the color was pretty much the same compared to the phone.
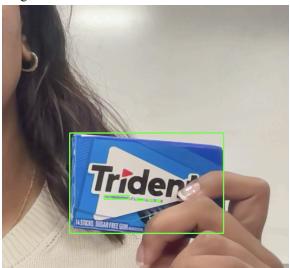
Image 1:

Image 2: