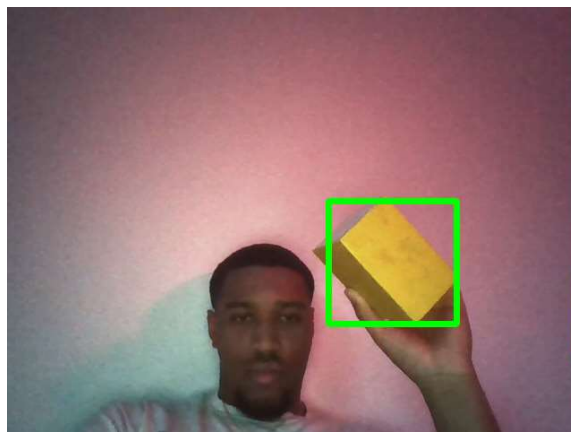1. From my observation, the HSV values tend to work better than RGB values as it does a better job tracking the object. The threshold range used to track the object is [-10, 10] on the HUE for the color yellow, and 100-255 for the Saturation and Value.
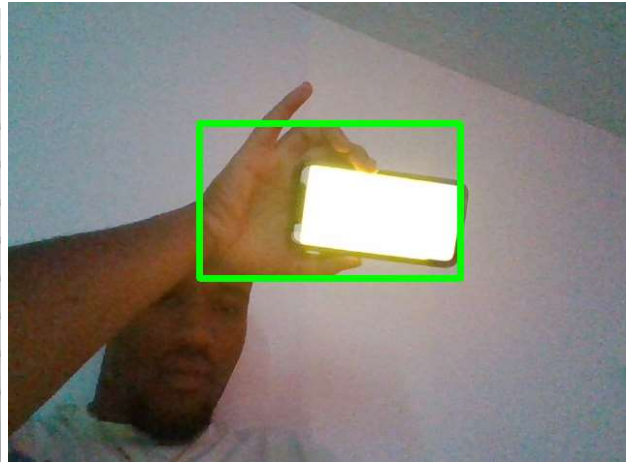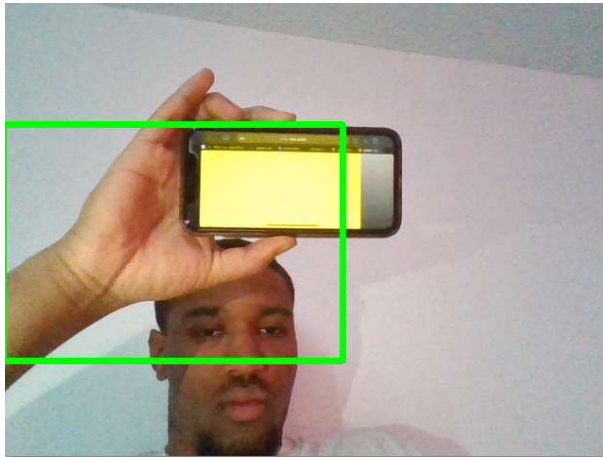
 —> HSV Value Tracking
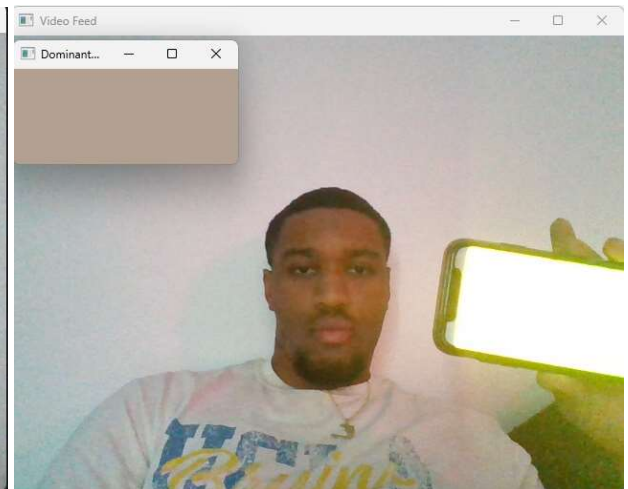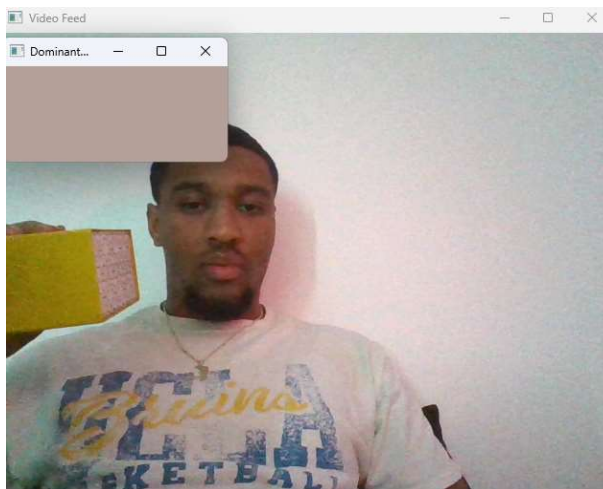
2. Differences in lighting conditions

I found that for the darker conditions, the object tracking worked better with dimmer conditions, this may be because the higher light causes more objects (like skin) to appear more yellow.

3. For the color picker on the phone, it seems to work better with the higher brightness but this could be contingent on the color chosen being yellow.

4. Dominant Color

Although the phone screen is brighter than the yellow object, the dominant color remains relatively similar.