OBJECT TRACKING DRONE

- The drone will be able to identify different objects in the captured footage in real time based on the color (yellow tea cup in my implementation) and follows the object.

1)We first convert image into HSV plane then select only particular region of HUE, VALUE AND SATURATION by using sliders

We are using the HSV color format because it is more sensitive to minor changes in external lighting. Hence, it will give more accurate masks and hence better results.

2)After converting the color space what we have to do is to filter out the yellow color and create a mask frame. We get the binary mask of our object.

What next is to get the boundaries of the object. To do that we will be using the concept of contour detection. Contours are nothing but boundaries that will surround our object. Thankfully, we don't have to find those boundaries on our own as OpenCV allows a function findContours() which we can use for our purpose. It takes a masked image and returns an array of contours.

3)We then find contours for the object along with Center of Mass of contour.

4)We always try to put the Center of mass of the object in the center of the frame and use PID to calculate the speed and movements of the drone