

The program size will be at least full screen or almost the entire screen size because there are a lot of features that need to be deployed.

The original values at the beginning is the following

- **Brightness:** 50
- **Rotation:** 0
- **Viewpoint:** None
- **Select a box in the image, then write the numbers for the color below:** The values for RGB will be blank
- **Computer Vision Algorithm:** The range will be 200 for lower bound and 255 for upper bound

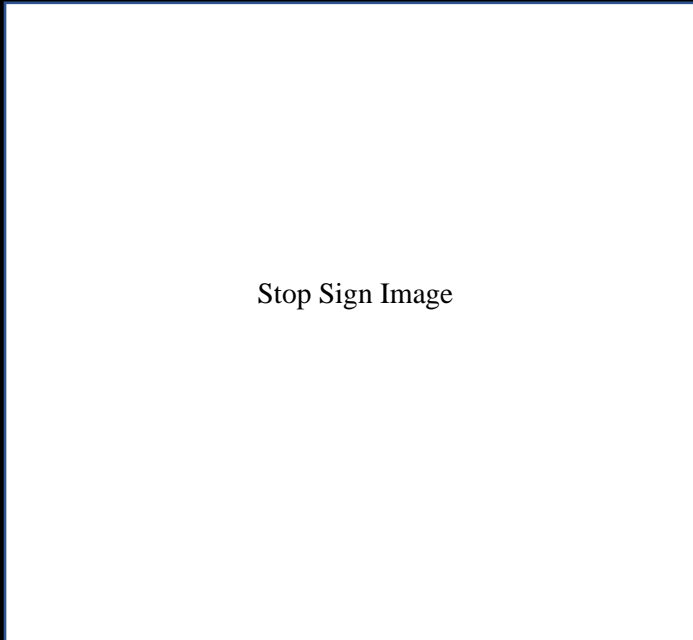
Features in the modification

- **Brightness:** it will change either entering the value of the number or using the slider. Once the user selects the button right next to the word brightness (on the left of the word), then it will modify the image. (If the user input invalid value, then will return an error says invalid range) (range: 0 ~ 100: 0 as dark while 100 is brightest)
- **Rotation:** same idea with brightness. (range: -180° ~ 180°)
- **Viewpoint:** It will have an option to select, then clicking the button will change the image that is located next to the word of Viewpoint. The options are up, down, back, left, right, front, and none.
- **Select a box in the image, then write the numbers for the color below:** When the user selects a pixel (or box), then entering the numbers of RGB and clicking the button next to Preview Color will only change the Preview Color Box that is located below the word. To modify the pixel in the image, then the user will need to select the button next to Red.
- **Computer Vision Algorithm:** User can change the range of red that the computer will recognize as red. As the user press confirm, it will update the text message below as well as the algorithm of identification.
- **Reset Everything:** It will go back to the original values as the image goes back its original.
- **Survey Link for this Study:** The button selection will be linked to a hyperlink which will go to the survey

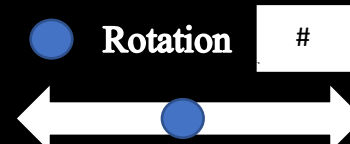
As the user changes the values of the image, the image and the words will change; for example, if the value change in the color of RGB, then it will update the image with that color, and might change the computer thoughts of the image(from stop sign to a dog)

**Notes/Questions:** Will changing the range of green and blue not affect the color of red? I found out that the color stop sign is #cf142b which is red: 207, 14, 43, which there is some green and blue inside. Do we need to add a threshold for those as well or set is as default for 14 and 43?

# Title of the Program. Created by Kenneth Kang for URSA 2020



Stop Sign Image



Select a box in the image, then write the numbers for the color below.

The range of number for each color is between 0 to 255.

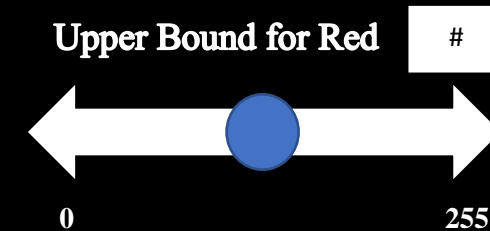
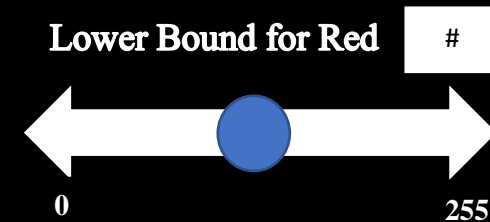


Computer think this thing as: \_\_\_\_\_

Reset Everything

Survey Link for this Study

## Computer Vision Algorithm



Confirm

If the red value is in between [lower bound] and [upper bound], then the computer will understand that it is red.