

Goals:

1. Capture an object and visualize it via drawing a rectangle around it.
2. Calculate Euclidian distances between objects' centers.

Implementation:

1. Convert image from RGBa to Grayscale and apply threshold to get a Boolean matrix:

```
# weighted method to convert RGB(a) to Grayscale
# also use constant thresholding - 0.5
gray_scale = (0.33 * r + 0.33 * g + 0.33 * b) > 0.5

gray_scale
```

✓ 0.7s

```
array([[ True,  True,  True, ...,  True,  True,  True],
       [ True,  True,  True, ...,  True,  True,  True],
       [ True,  True,  True, ...,  True,  True,  True],
       ...,
       [ True,  True,  True, ...,  True,  True,  True],
       [ True,  True,  True, ...,  True,  True,  True],
       [ True,  True,  True, ...,  True,  True,  True]])
```

2. Iterate over Boolean matrix and start building an object graph:

[illegible][illegible]

3. At this step every object graph has minimal and maximum cells in x,y axis directions. Using these points, we can easily create a rectangle around the selected captured object.

