

# Journal Report 1

9/1/19-9/8/19

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Period 1, White

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## Daily Log

### Tuesday September 3

I successfully identified the position of a orange ping pong ball within a maze. I started reading some articles on ball tracking and HSV color ranges. Implemented a masking on the video to blur out all but a couple of colors to accurately track the silver ball inside the Perplexus. Accuracy of that tracking is not very good.

### Thursday September 5

I worked on recalibrating the HSV values to be able to detect a reflective metal ball inside the Perplexus, something that proves to be difficult because of inconsistent masking values. I debugged my previous code in attempted to convert the image to black and white before adding the HSV mask, but the Grayscale image didn't prove to be compatible with the HSV mask function.

## Timeline

Date	Goal	Met
Today	Begin setup and research of Perplexus ball tracking	Yes, successfully met my goal.
Today plus 1 week	Locate the silver ball consistently and save coordinates	
Today plus 2 weeks	Fine-tune the silver ball's location while the Perplexus is being solved	

## Reflection

Throughout this week, I focused on the first step of my project which is ball tracking. At the beginning of the week, I started to research existing circle detection methods such as the Hough Transform, but came across a more effective ball tracking algorithm that involved a Masking function in OpenCV. Rather than look at gradients within a single image to find circular boundaries, the masking function looks at the colors within the HSV values and filters out those that aren't relevant. I was entirely successful in detecting an orange ping pong ball inside a maze, and am still working on tweaking the HSV values to work for the silver, more reflective and hard to define metal ball within the Perplexus itself.