Daily Log

Monday, November 11

Coded canny edge detection to outline objects in the image. Used kmeans segmentation to create region with roughly the same color. If the multiple kmeans segments lay in same canny edge detected region, combine the segments.

Tuesday, November 12

Applied the LAB color-model analysis from before on the average LAB color values of the region from canny edge and kmeans, but didn't use the logarithm function to evaluate. Gathered more testing images.

Thursday, November 14

Learned some basic functionalities of GitHub and how to use it. Uploaded all files and some test images onto GitHub. Tested the region/feature-based shadow detection program.

Timeline

Date	Goal	Met
October 27	Associate each shadow with respective object for images with one object	No. I went back to focusing on improving my identification of shadow pixels and regions with the logistic growth curve.
November 10	Associate shadow with respective object for images with one object	No. I tried with the mean-shift segmentation, but the results vary too much based on the image. Some are successful, and some aren't.
November 17	Implement a feature-based shadow detection and a region-based shadow detection.	Yes. The feature-based detection used gradients of object outlines, which I combined with a previous kmeans implementation, which I then also combined with a color model analysis.
November 24	Determine the most accurate shadow detection method	
December 1	Identify all objects in image	
Winter break goal	Associate objects with their shadows on the image	

Reflection

I'm starting to see that my program doesn't work well if a given image is in gray-scale, which makes sense since I use LAB color analysis which largely depends on there being drastic differences between LAB values for shadow and non-shadow pixels. I will need to make sure I test my program with (colored) images where shadows are at different intensities later on.

The combined feature, region, and color-model based shadow identification program doesn't work as well as my previous program with just the region and color-model based method. I think it's because the canny edge detection can only detect gradients that are steeper, when objects have greater contrast with their background, and the region where shadows and respective objects meet are usually in a shaded region where there the gradient is not steep at all. I spent too long trying to learn how to upload, commit, and push updated files onto GitHub and how to merge threads together, so I should be able to get much more accomplished over next week now that I seem to know the basic necessary functions of GitHub.