Week 5&6

Completed on Dec 3, 2017

This week we hope to incorporate one of Trush's API's. He found three APIs so far. 1) Using .dom\* to create Word, PDF, and HTML documents. When we usually send codes, most people who are just starting off, send codes through Word documents. This can be a bad habit as its inefficient, but for beginners, it can be easy to work with. Also, another good use of this is that you can see your code straight away rather than having it sent to a word document then have it sent to a pdf, so you could see it on a phone. 2) We found an API that will fix the code for you. By fix we don't mean like fix the code so you don't get any errors, but rather make it so if the code ever gets updated, you don't have to go back to make sure that it works or not. It would automatically fix it for you. This is one problem that Shane and Trush faced. Both got an error saying that the version is outdated and that some features have been disabled. What ended up happening is, we couldn’t get the 3D cluster to work. It would show the graph, but it wouldn't plot any of the pixels proportions. 3) The last API Trush found was a way to speed up the output. Our video takes a very long time to run. This is mostly the case when we have an HD video. The reason why 3D videos take longer is that there are more variety of colors in HD videos. Therefore, the color line plot moves very slowly. Another thing is that we tend to skip a lot of frames to speed up the process. We shouldn't need to do that if we want to make this a project that can be built on in the future. This API could relieve a lot of tensions, if not all then at least somewhat.

Completed on Dec 3, 2017

We hope to add descriptions to MATLAB classes so it's easier for people to understand what is going on with our code. Shane did a very good job going into detail of almost what every part of the MATLAB code does. He made a video about it too. Here is the link: <https://www.youtube.com/watch?v=NfeG2EDdjmE&index=3&list=UUmQA16swmtPa29pRo9YtRTA>. Although, this doesn't include our finished product of MATLAB (still needed to add more colors to this, after the video was made) it explains everything that we have done so far. This may be helpful to those who really want to get into what we are doing, but the thing that really makes a project more interesting is a very short description. For example, people on stack don't want to see all your code. The longer the code the faster people close out of your question. They get discouraged to help because the code is too long, and is mostly code. That's why we have it, so our code is shortened, and briefly explains what is going on.

Completed on Dec 9, 2017

We are currently reformatting the display of MATLAB code. We want to make sure the code is condensed so it does what it is supposed to do, and not show a bunch of code. Also, as usual, make sure things such as indentation is correct. Nobody wants to see code that is not properly indented, (especially on stack!). We want to make the code look appealing to the user, not a pile of junk. We have a ton of code and the last thing we would want to happen is have some code misaligned to the rest of the code. Luckily, programming languages make it easier for us to do it all in one step. Next what we need to do is create a way to spin a 3D plot. We most likely won't have this done because we are working with Java and Arduino to get another finished product, but it's a cool feature we can look  into if time permits. Another thing that we had to do, and got completed is changed the dots in the 3D figure to spheres. This makes it look more appealing.

Completed on Dec 9, 2017

We are currently in the process of making a color wheel. Our color wheel must be ridiculously small to have it working properly. A lot of ink and paper will have to be used to make the wheel work accurately. At first, we made a full circle, but then come to realize that the servo only rotates 180 degrees. If we wanted to have it so it would spin a full 360 degrees, then we would've had to take the servo apart and mechanically fix it, so it would allow us to. However, we chose not to do it like this because it would require not only new equipment, but also have the screws all over the place. We didn't want to break this servo because it is not ours. We wanted to make sure everything was taken care of and have it returned brand news. Back to the color wheel. We now must make a semi-circle and somehow attach it to the Arduino. If we get this then all we need to do is have Java or Arduino run the code. If we do it in Java, we must find a way to use Java and have it rotate the servo with Arduino code. Or,  we can use Arduino and find a way to call a variable created in Java and run it from there. The variable created in Java is called maxColorIndex. This variable allows us to get the textfile from MATLAB with all the proportions and then have it sent to Java. Java then takes the proportions and sorts it from max to min all in an Array. Finally we can use this variable, and have it sent to Arduino ready to use.