

## Lab 2 Report

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### Write-up Questions

#### Part A

3.- Run your sketch and look at it. Describe what you see. What happens when the rotation gets faster? Slower? In the opposite direction?

I made my sketch so that it starts rotating clockwise very slowly, and it is responsive to four keys; the up, down, right, and left arrows. The up arrow will increase the speed of the rotation, while the down arrow will decrease it. The right arrow makes the wheel spin clockwise, while the left one makes it spin anti-clockwise. These two last keys won't do anything if the wheel is already spinning in the direction indicated, i.e. if the wheel is spinning clockwise and the user presses the right arrow, nothing will change on the sketch.

As we start speeding up the rotation of the wheel, we start seeing different shapes inside of it. These shapes seem to morph and even change color as the speed of the rotation changes. With higher speeds, we start losing sense of the direction of the spin, and at different points, the wheel seems to be spinning in the opposite direction. At certain very high speeds, the wheel seems to be rotating very slowly, and as the speed keeps increasing, we perceive all kinds of different visual effects inside the wheel. As we slow the wheel down, we see those effects again, and it can seem like the wheel is actually speeding it up instead of slowing it down. When we change the direction of the spin, we get to see the same effects, but in the opposite direction, which many times can be deceiving, and while we may perceive it as spinning one way, it may be spinning the other way.

#### Part B

4.- What did you have to do to make your app function the way it does? What would you do to make sure an interaction will work with most users?

For this second part of the lab I created a very simple game in which the user has to press the key on their keyboard that corresponds to the letter they see on the screen. Each letter stays on the screen for three seconds, after which it disappears and a new appears in a different spot. This game would be very easy for most people to complete, but almost impossible for people with color blindness, especially for those with deuteranopia. This is because the “game screen”, i.e. the section of the screen where the letters appear, has a background that goes from green to red,

and the letters are displayed in random tones of green. For people with normal vision, the letters are quite hard to miss, except in those cases where the tone of green of the letter displayed matches almost exactly the color in the background. On the other hand, people with deuteranopia would have a very difficult time finding the same letters because they are missing the M cones in their eyes, which makes it very hard for them to distinguish between different tones of green and red.

I purposefully chose the colors on the background, as well as the ones on the letters, to make it an almost impossible game for people with deuteranopia. However, this could easily be fixed by changing the color scheme used on the game's background and letters. It would also make it easier to distinguish the letters if we changed them to a very contrasting color, such as blue or black, without the necessity of changing the background. Apart from the very obvious solutions of changing the colors, there are other things that we could implement to make this game playable for people with any kind of color vision deficiency. For example, we could use the function *stroke()* to add borders to the letters using a contrasting color, or add a black dot that indicates where the letter is located within the screen, which would help the user to inspect the letter without having to look for it on the screen. With this last solution the game would still be quite hard for colorblind people, but it could give them better chances of getting it right.

## **Part C**

4.- How many literal 3's do you have to alter to 4's in your code?

None.

5.- Redo C(3) with your new sketch. What do you notice? How is your reading different in each step?

I noticed that reading the words displayed was just as easy as with the numbers. On the other hand, it was much harder getting the colors right, as it was confusing seeing the word but having to say the color outloud.