**Project 2: Agents with Agency**

This project utilized different aspects in code to make objects appear to have agency, or “free will” in what they did. None of the elements could be human, so all of them had to interact with each other within the computer.

**Coding:**

For the first type of interactive agent, I made a separate class called “runners” in which tiny circles, representing my runners, would move somewhat erratically over the screen. I really liked the noise example in class, so I decided I wanted to do that for my runners to give them the appearance of some agency.

I didn’t like it when they traced themselves all over the background, so I devised a way for what they did to be covered up gradually, so that it would appear as if they were leaving behind “trails”. For this reason, I make a generator that randomly placed ellipses the same color as the background onto the background, 500 or so per frame. This led to the trails gradually disappearing in a way that looked algae-like.

I had a lot of trouble with the timers for making sure the runners only created one “child” when they ran into each other. I eventually solved it by using the *millis()* function, which enabled me to make a sort of timer, that once they made a baby, they had to wait a second before making another one.

I also had trouble when it came to the chasers. Making the actual class wasn’t hard, I basically modified the “runners” class, but getting the runners to disappear when they ran into a chaser was hard. I learned, however, that there are two types of arrays in processing, and that I had to change the array type of the runners in order for any specific runner to disappear so that the chasers could continue to keep the population down.

After that, I tried to figure out how to get the chasers to actually “chase” one of the runners and to have the noise movement the rest of the time, but I ran into multiple problems with each solution I tried, and eventually decided to leave that problem for when I had more time to figure it out and leave the current status of their interactivity as-is.

**Interaction:**

The interaction between the two classes of objects has no human intervention whatsoever. It relies heavily on the way the noise operates within each of the classes, and on chance that they run into each other.

When two of the runner class intersect each other, they interact by producing another “baby”. When a chaser runs into a runner, it “kills” the runner, causing it to disappear and leaving only its trail behind to be covered by the purple dots.

When the number of runners is more than six times the number of chasers, the number of chasers increases, so that the population of the runners interacts with the population of the chasers.

**Personal Observations:**

There were several things I observed personally while this sketch ran. First, I was actually pretty happy with the dots that covered up the trails. I liked how everything was round and the colors matched nicely. I also liked the noise applied to the runners’ movements: it made it look organic and natural, and also made them unpredictable to me. I noticed that the runners quickly multiplied, but I still wanted there to be fewer chasers than runners, especially when the reproduction of the runners relied on them happening to collide. Therefore, I set it so that the runners would always be a little more than six times the number of chasers.

I like how they move, but I would prefer if the chasers would actually “chase”. It is a problem I plan to address in the future.

**Future Changes:**

In the future, I think I would like to make this app into a screen saver. It looks really nice and is pretty calming, just like a screensaver should be. Not to mention, the screen is constantly moving, which is exactly what a screensaver is supposed to be doing. It does this without human interaction, which is also usually a qualification of a screensaver.

In the future, I would also like to fix my “chasers”. Not only would I make it so that they could actually follow the runners, but I would like to change their design as well to make them appear like the others: round and with a color that complements the other colors in its environment.

**Conclusion:**

Even though there was no human interaction with this piece, I was happy with the way that it turned out. I would have been happier if I were able to figure out the chaser bit, but if I can get that done in the future, that won’t bother me as much. I thought this “game” was fun and at the same time, relaxing. I enjoyed making it, and I hope that others enjoy its aesthetics as well as the calming nature of the “organic” movements of the agents.