

DOCUMENTATION AND ARTIST STATEMENT

We have used two mediums in our artwork that is Processing and Arduino. We used processing to extract the data from the excel file 'Lotus Genome Sequence' and connect it with Arduino to process data. This gave us accurate information if it established a connection with Arduino or not. We then used the mousePressed function which enables us to run through all the different 4 letters inside. Arduino on the other hand inputs the data from the LED pin and the data that comes from the serial port of processing. Colors were then assigned to different letters. A is red, C is green, T is blue and G is purple.

The whole idea behind this project is to extract the DNA or the Lotus Genome sequence and present that in our own way. Upon research, we found that it is scientifically called as Lotus japonicus which is the ideal plant for genome studies and known as 'sacred lotus.' According to scientists, it is a powerful way of enlightenment. Using this information we are going to use LED that will be our source of enlightenment and will associate that to each letter that represents the genome sequence. This way we can make it visually appealing while depicting the sequence and pattern of letters. We followed the path of the artist Heather Dewy Hagborg who also used the DNA of humans to make a face and visually depict how each individual would look. We used the same context in our own way which is the LED instead of a face to show the DNA of Lotus.

"Enlightenment" is taken both literally and figuratively in this case; there's literal use of lights, as well as alluding to the feeling of enlightenment upon discovering the answer to something, in this case, the morse code light patterns. There was also an exploration in taking data and placing it in the emotional context it implies. Projects like "Mount Fear," for example represents, terrifying data, and presents it in a way that is unsettling. Our project takes the data meant to represent the makeup of something associated with wonder and peace. The choice of using flickering lights surrounded by flowers, but never truly revealing what the pattern is supposed to represent, encourages the same feelings that the Lotus would. There were also some concepts borrowed from scholarly work. The article "Artistic Data Visualization" discusses the juxtaposition between hard data and artistic distortion, where for the most part, it is not a priority to make the data explicitly readable, but rather to invoke a certain feeling, in favour of sending a message. It is curious to think how the organic state of the flowers will mesh with the steady, pre-programmed light patterns. It could be said that an audience member trying to solve the puzzle may be distracted from the aesthetic, or maybe someone focusing on the aesthetic may not even notice the light pattern. Neither outcome would be a bad thing, it would be curious to observe.

The following is our contribution to the project. Coding was done by Shiann and its execution was completed by me. Shiann edited the code that was provided to us on D2L and catered it to our requirements. She also took inspiration from the code online that taught the basics of how to use LED lights in the code and make that work. After that, she finished the code on her end for both Arduino and Processing and sent both the files to me. The original .csv file was imported into Processing, where the letters in the genome sequence were sent to Arduino through the Serial port as characters. From there, each character would trigger a function representing the letters as morse code light patterns. I tested it on my laptop and since we had the LED concept, I had to make a circuit to check if the code was working properly. The circuit was made using the concepts I learned in my Tangible Media class which comprised of an Arduino, solid wires, 4 LEDs, resistors, battery pack, and breadboard.

Upon trial and error, we made a few changes to the code. To complete the requirement of the project, my task was to make it visually appealing as well. So, I incorporated the LEDs in the flowers which resemble Lotus, making the flower glow/enlighten as we had intended in our

artwork. Finally, putting all together I ensured every aspect of our artwork was working well at the end and prepared the necessary documentation and artist statement which includes the contribution made by Shiann and me as a team.