Brief Description and Concept:

My imaginative creature is a kind of worm that form its body by taking the petal of flowers. When mouse is clicked, the creatures will come out, with their bodies color and size of the circle components the same as the flowers that “bear” them. When restarted, the colors, size and position of the flowers will change, and those parameters of the worms will change accordingly. The worms have three kinds of moving forms: rotating, linear moving, moving according to mouse position. To make the worms moving in a lively way, the legs are consistently rotating, and each legs rotation are slightly different from the beside legs.

Visual Documentation:

Development and Technical Implementation:

At the beginning the creature I drew looked like a caterpillar wearing shoes. To make it looked like moving, I added the wave-like swing of shoes. Then I thought, why not make it truly move? So, I constructed the code to let the creature rotate, move according to X-axis and mouse position. To add the background, I drew some flowers using a user-design function called drawFlower(), whose petals used to be ellipses. When the flowers and caterpillar-like creatures appear on the screen at the same time, with the similarity between the creatures’ circle components and the elliptical petals, I came up with the idea that the creature actually was born from the flowers. Then, I adjusted the code to make the creatures’ color and size for the circle components the same as the flowers. When mouse was clicked, the creatures will come out.

Coding:

I stuck at a point when I tried to use color(), yet the system showed“can't find variable: color”. LA Joyce told me online that color() function is within p5.js and needed to use in setup() or draw(). As I used it when defining global variable, it didn’t work.

Another bug in my code (which I haven’t solved yet) happens on the linear moving creature. If its

Reflections:

Describe what values were stored in the array(s) and how you utilized them. Share your experience while using the array(s).

I used arrays to store the rotation degree and speed of legs, the color and size of the flowers/creatures, and the position of flowers. Doing so allowed me to give each leg a specific rotate movement, each flower/creature a specific size and color, each flower a specific location while saving lines of codes to create different variables. For loop coping with arrays can help assign value to each variable in an array.

Explain when/why translate(), push() and pop().

I followed the temple to use translate() when drawing the creature. After translating the original point to the center of the canvas, it was easier to decide the position of elements. Also, it was easier to drawing something symmetrical to the central axis. Another common case to use translate is before rotation. I needed to change the origin to the point where I want the target object to rotate. In this case I also used push() and pop() to confine the original point translation only happened within the area I wanted. Push() and pop() are also helpful when I want to confine the color, scale, stroke and other changes only influence the target subjects.

What is the effectiveness of User-Defined Functions?

It can shorten the code when users want to use a certain function for multiple times. They can call the function and set the parameters instead of writing similar codes repeatedly. I created user-define functions of drawLeg, drawCreature and drawFlower, which greatly ease my work when I wanted to draw eight shoes for each creature, three creatures and three flowers.

What parameters did you added to your functions? How were they manipulate the effects of the functions?

For the drawCreature and drawShoes function I added X and Y position, Size, color, scale as parameters, which allow the creatures and flowers to have different positions, sizes, and colors.

Are you able to identify methods/processes in your programming that are radically changed because of the uses of the functions you defined?

With the uses of the functions, I was more focused on and willing to attempt changing some features of the objects. For example, as drawCreature function allowed me to draw a creature by one line of code, I was more eager to try to rotate it, moving it or mouse control it, as I didn’t need effort to calculate a new creatures size and position.