Experiment 2

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1 Introduction

In this experiment, there are two parts of tasks for us. In the Part1, we are expected to do some changes on the given project. The changes are about the shape and the shape's color. Shortly, we are expected to understand a given project, and change the project correctly according to the given confirmation.In the Part2, we are expected to do an animation using our previous experiment. There are changes the features of this project, and additionally an animation.

2 Experiment

2.1 Part 1

In the Part1, there is a project which is named 'Gasket4'. In this project, there will be lots of triangles which are colored differently. The triangle are drawen nested and all triangles has other triangles in itself. And the triangles is filled with the same color of the vertices. We are expected to make the triangles is empty and the vertices colors are mixed color.

Firstly, I changed the color of the triangles like the below picture. After the

Figure 1: Gasket

changing of color, I changed the draw mode of the triangles to line loop, and the result is the correct for me.

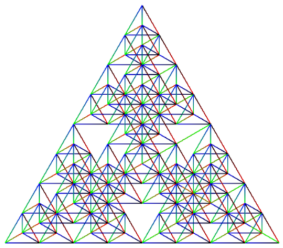

Figure 2: Result Gasket

2.2 Part 2

In this part, we are expected to do an animation with our previous experiment. Previous experiment was an emoji which has curved mask. This part consists of three steps. For Step 1 , I scaled the emoji with 0.2. For doing this scaling, I multiply all the points with 0.2 and I got correct result. For Step 2, we are expected to do an animation. In the animation, the emoji should move left and right. The degree of the movement is 45 left and 45 right continuously. I changed the vertex shader to make a rotation in the shape. With identifying a transformation matrix in the vertex shader, I achieved this rotation. For doing the movement continuously, I added an animationRequest and for every step of animation, I calculated the transformation matrix again and again with the angle of rotation. For Step 3, we are expected to add a color change continuously while the emoji moving. I changed the fragment shader for achieving this change. I added a float variable and integer variable to the fragment shader. For changing the color of emoji of face, I get integer variable like Shape Id and Shape Id just the face id ,the color changes. The float variable is for the changing Green color of the shape step by step. IF USER PRESS 1 ANIMATION STOPS, IF USER PRESS 2 ANIMATION STARTS, IF USER PRESS 3 ANIMATION AND COLOR CHANGE STARTS.

3 Conclusion

This experiment was a little hard for me. I just started to learn Javscripts and Computer Graph topics, that's why it is hard to me learn these. In this experiment, I learned how to change positions and colors of shapes using and

changing Vertex and Fragment shaders.The hardest thing to achieve in this experiment is calculating the transformation matrix and rotating the shapes with angle.

Table 1: Methods

Method Name	Input(s)	Output(s)	Info
Buffer()	gl, shape, shapeColor	bufferArray	Creates Sha
drawShape()	gl,shape,Buffer,shapeMode,vertexNum,shapeId	-	Draws Shap
detechkey()	value	-	Listens Key
render()	No input	-	Render Ani
quadRaticBezier	p0,p1,p2,t	pFinal	Calculates
class Render.constructor	callback	requestAnimation	Construct A
start()	No input	return this	Start Anim

References