Drawing National Flag of South Korea

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1 Introduction

This is a JavaScript program drawing national flag of South Korea with WebGL. This program generates a canvas displaying the flag on the page. The *taichi* diagram in the center rotates, showing a magical effect.

2 Implementation

The program first initializes the shader program with function **initShaderProgram()**. In this function, the program gets the shader source codes embedded in HTML document, then compiles and links them. The function returns the linked program to the main function. After the shaders are initialized, the **animate()** function is called.

In the **animate()** function, the program draws the diagrams. The background is set to white first. Then four static GUA diagrams are drawed. The vertexes of the rectangles are stored in arrays. When drawing a polygon, a buffer is created and binded first, and then it is assigned with the data. The polygen is rendered by calling **gl.drawArrays()** function.

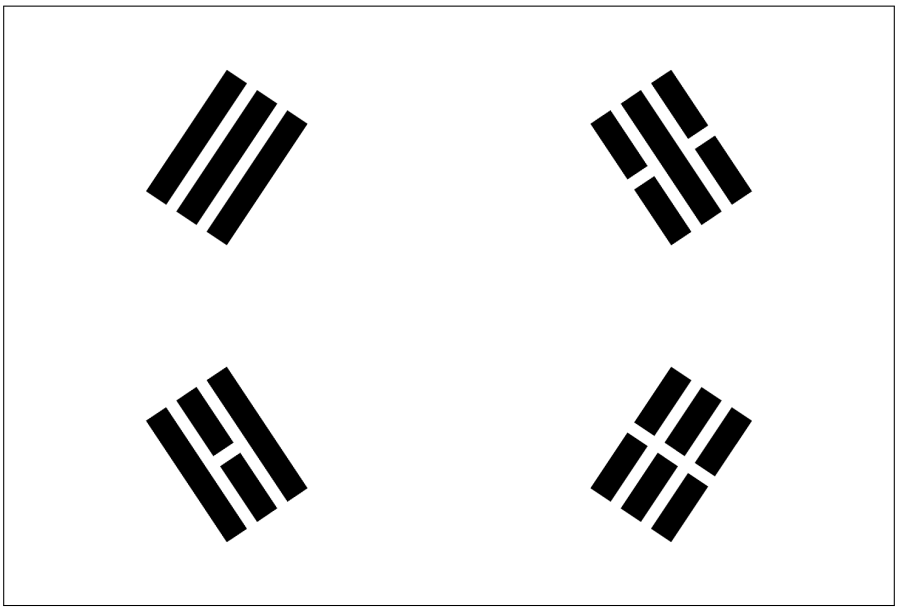


Figure 1: GUA diagram

Then the *taichi* diagram is drawed. It is composed of two big semicircles and two small semicircles. A semicircle is implemented as a polygon with many edges. The coordinates of vertexes are calculated with an original angel, which is the slope angel of the central axis. The slope angle of the central axis is updated in real time to realize the rotation effect.

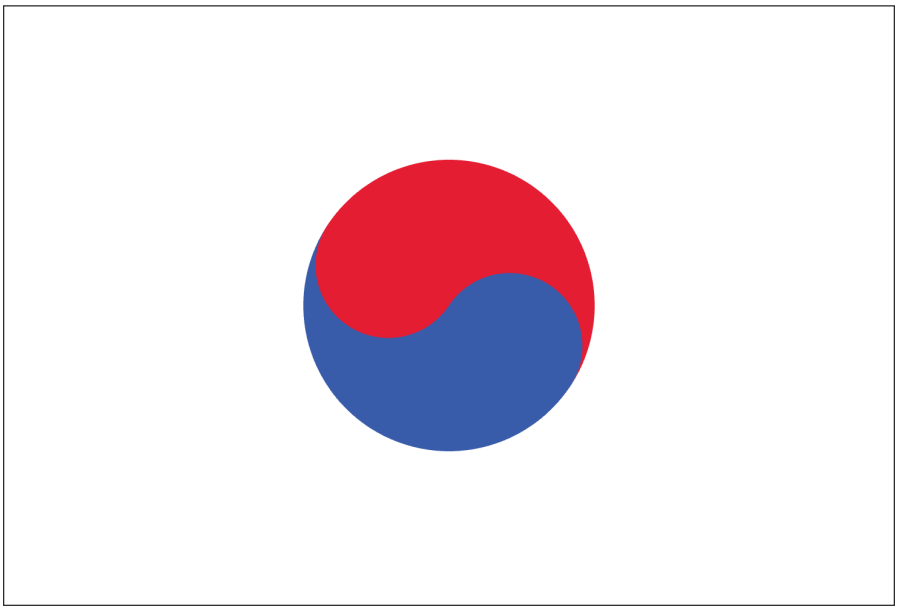


Figure 2: *taichi* diagram

3 Result

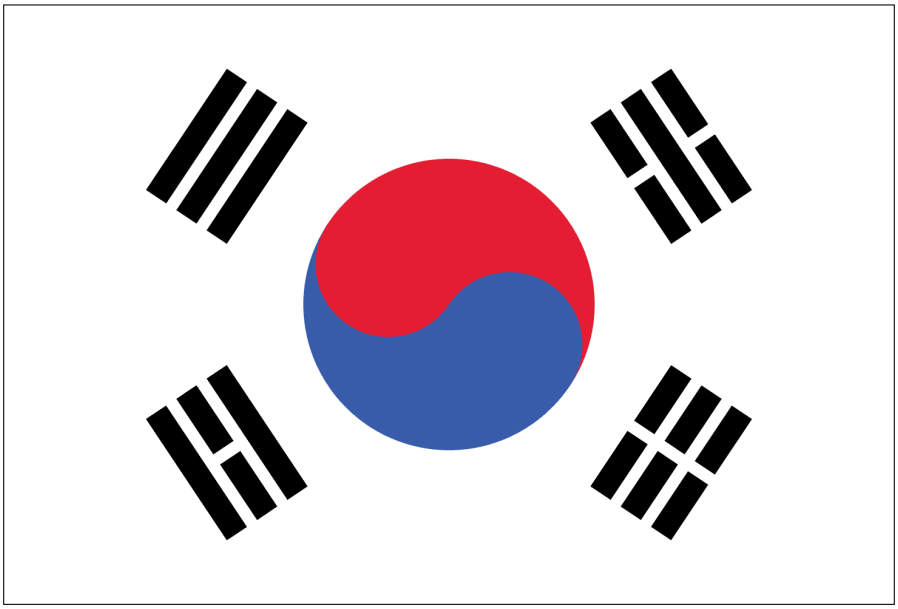
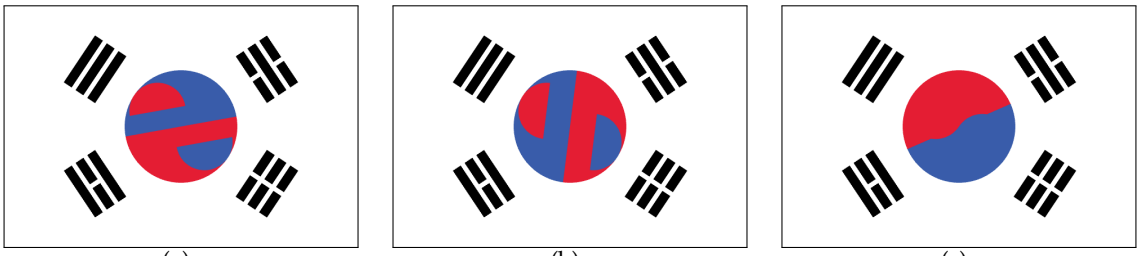


Figure 3: flag drawed by the program



(a) (b) (c)

Figure 4: rotating flag