COM3037 HW1 REPORT

Project: Print the first letter of my name and the last letter of my last name using using the shader-based graphical programming approach and WebGL.

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In html file:

```
// Start-Stop rotating and change direction
    Start / Stop Rotating
          </button>
          <button
             id="Direction_Button"
             style="margin-left: 20px;"
          >
             Change Direction
          </button>

// For choosing colors

        <select id="mymenu" size="4">
           <option value="0">Black</option>
           <option value="1">Blue</option>
           <option value="2">Green</option>
           <option value="3">Red</option>
          </select>
```


```
// for translation
           <div>
             translate x 0
             <input id="tsliderx" type="range" min="0" max="10" step="1" value="0"/>
             5
            </div>
            <div>
             translate y 0
             <input id="tslidery" type="range" min="0" max="10" step="1" value="0"/>
             5
           </div>
//for speed initialization

            <input
             id="slide"
             type="range"
             min="0"
                   max="1000"
                   step="10"
                   value="500"
               />
```

The others are shaders.

In javaScript file:

This works for choosing colors

```
menu.addEventListener("click", function () {
  switch (menu.selectedIndex) {
    case 0:
      red = 0.0;
      blue = 0.0;
      green = 0.0;
      break;
    case 1:
      blue = 1.0;
      red = 0.0;
      green = 0.0;
      break;
    case 2:
      green = 1.0;
      red = 0.0;
      blue = 0.0;
      break;
    case 3:
      green = 0.0;
      red = 1.0;
      blue = 0.0;
      break;
  }
});
```

I use slider for showing rotating the letters also changing the rotating direction

```
document.getElementById("slide").onchange = function () {
  delay = this.value;
};

directionButton.addEventListener("click", function () {
  direction = !direction;
});

rotationButton.addEventListener("click", function () {
  rotation = !rotation;
});

document.getElementById("tsliderx").onchange = function () {
  tx = this.value;
};

document.getElementById("tslidery").onchange = function () {
  ty = this.value;
};
```

Associatie out shader variables with our data buffer

```
var vPosition = gl.getAttribLocation(program, "vPosition");
gl.vertexAttribPointer(vPosition, 2, gl.FLOAT, false, 0, 0);
gl.enableVertexAttribArray(vPosition);
color = gl.getUniformLocation(program, "color");
thetaLoc = gl.getUniformLocation(program, "theta");
theta = 0;
gl.uniform1f(thetaLoc, theta);
tlocx = gl.getUniformLocation(program, "translatex");
tlocy = gl.getUniformLocation(program, "translatey");
```

Set clear color to black, fully opaque

```
gl.clearColor(1.0, 1.0, 1.0, 1.0);
render();
```

Clear the color buffer with specified clear color

```
function render() {

  setTimeout(function () {
    requestAnimationFrame(render);
    gl.clear(gl.COLOR_BUFFER_BIT);
    if (rotation) {
      theta += direction ? 0.1 : -0.1;
      gl.uniform1f(thetaLoc, theta);
    }
    gl.uniform1f(tlocx, tx / 10);
    gl.uniform1f(tlocy, ty / 10);
    gl.uniform4f(color, red, green, blue, 1.0);
    gl.drawArrays(gl.TRIANGLES, 0, 70);
  }, delay);
}
```

Lastly, this is final version overview of my assigment