CS 5410

More HTML5 Canvas Rendering

Rendering a Texture (image)

1. Define the geometry (in “coordinates”)
   - Center
   - Width, Height
2. Create an `Image` object
3. Load the image
   - Remember browser asynchronously loads things
4. Render the texture
   - Translate → Rotate → Translate → Draw

Define the Geometry (among other things)

```
let texture = {
    imageSrc: 'images/USU-Logo.png',
    center: { x: 50, y: 50 },
    width: 100,
    height: 100,
    rotation: 0
};
```

Create an Image Object

```
texture.image = new Image();
```

Load the Image

```
texture.ready = false;

texture.image.onload = function() {
     this.ready = true;
};
texture.image.src = texture.imageSrc;
```

Render the Texture

```
function drawTexture(texture) {
    if (texture.ready) {
        context.save();

        context.translate(texture.center.x, texture.center.y);
        context.rotate(texture.rotation);
        context.translate(-texture.center.x, -texture.center.y);

        context.drawImage(
            textureimage,
            texture.center.x - texture.width/2,
            texture.center.y - texture.height/2,
            texture.width, texture.height);

        context.restore();
    }
};
```

A Graphics API - Definition

```
MyGame.graphics = (function() {
    let canvas = document.getElementById('canvas-main');
    let context = canvas.getContext('2d');

    function clear() { …}
    function Triangle() {…}
    function Rectangle() {…}
    function Texture() {…}

    return {
        clear: clear,
        Triangle: Triangle,
        Rectangle: Rectangle,
        Texture: Texture
    };
}());
```

A Graphics API - Use

```
let myTexture = graphics.Texture( {
    imageSrc: 'images/USU-Logo.png',
    center: { x: 50, y: 50 },
    width: 100,
    height: 100,
    rotation: 0
});
```

```
function update() {
    myTriangle.updateRotation(0.01);
}
```

```
function render() {
    graphics.clear();
    myTexture.draw();
}
```