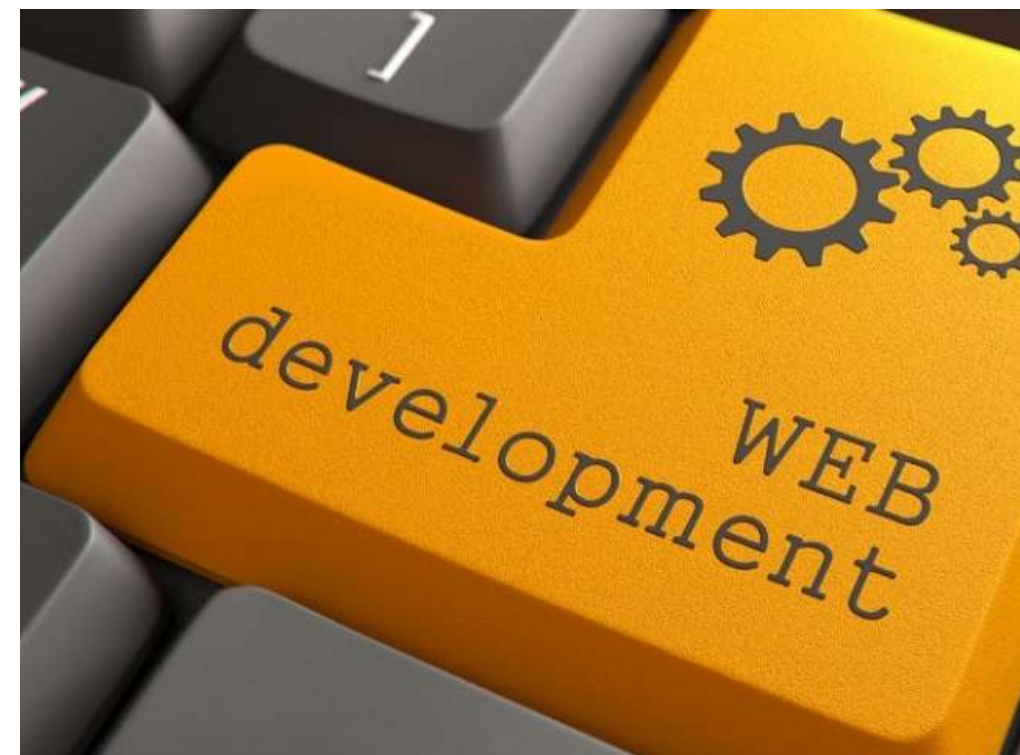




CSCI 165

Introduction to the Internet and the World Wide Web

Lecture 7: Graphics III



Jetic Gū

Overview

- Focus: Web Development
- Architecture: Internet
- Core Ideas:
 1. Advanced SVG
 2. Lab session

Raphaël

Creating SVG inside your HTML

Previously

- Creating SVG using an online SVG painter
- Inserting SVG using `` tag
 - cannot manipulate SVG embedded with ``
- Basic animation

SVG in HTML

- Why?
 - Manipulation: you can animate code created SVG on your webpage
 - Flexibility: dynamically generate SVG using javascript
- Raphaël¹
 - Javascript Library for creating SVGs

1. <https://dmitrybaranovskiy.github.io/raphael/>
2. <https://developer.mozilla.org/en-US/docs/Web/SVG/Element>

SVG in HTML

- First, lets see the internal of an SVG file
- Save the following as a text file, then rename it as image.svg

```
<svg xmlns="http://www.w3.org/2000/svg" width="200" height="100">  
  <circle fill="#0f0" r="10" cy="20" cx="50" />  
</svg>
```

- Include the SVG file in your html
- SVG files follow HTML syntax, but with a different set of tags for shapes!

SVG with Raphaël

- Step 1: download `raphael.js`, link on the course website¹
- Step 2: load this library in the `head` section of your HTML file, alongside `jQuery` and your own `js`
- Step 3: inside your HTML file, create a `div` element called `myFirstSVG`

```
<div id="myFirstSVG"></div>
```

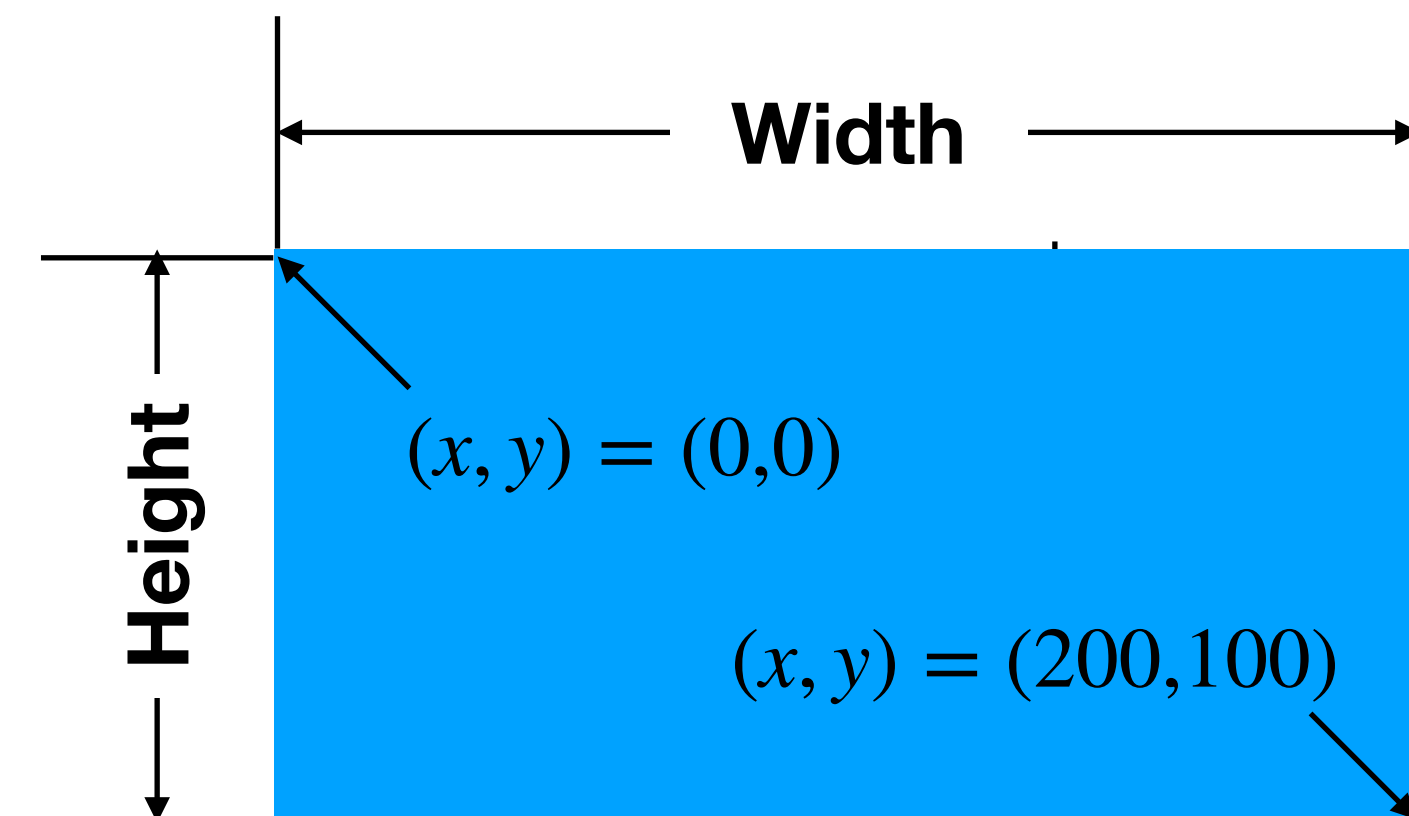
SVG with Raphaël

- Step 4: inside the `setup` function of your javascript, use `Raphael()` to create a new object
- ```
canvas = Raphael('myFirstSVG', 200, 100);
$("#myFirstSVG").css("background-color", "#ABBAEA");
```
- Here, 200 and 100 are the width and height of the target SVG you are creating



# SVG with Raphaël

- Step 5: draw a circle, using
  - `circ = canvas.circle(60, 40, 20);`
- Step 6: change colour like all HTML element
  - ```
circ.attr({  
  'fill': '#f00',  
  'stroke': '#000',  
  'stroke-width': '2'  
});
```



SVG with Raphaël

- What other shapes?
 - **rectangular:** `rect(x, y, width, height)`
`canvas.rect(20, 30, 100, 12).attr({fill: "orange"});`
 - **ellipse:** `ellipse(x, y, width, height)`
`canvas.ellipse(120, 130, 40, 30).attr({fill: "red"});`
 - **text:** `text(x, y, string)`
`canvas.text(40, 40, "I like cheese").attr({
 "font-family": "fantasy", "font-size": 24});`

SVG with Raphaël

- Grouping

- ```
ellipse1 = canvas.ellipse(110,80,120,42).attr({"fill": "blue",
"stroke": "yellow"});
text1 = canvas.text(100,90, "Click me").attr({"font-family":
"fantasy", "font-size": 24});
```
- ```
button1 = canvas.set();  
button1.push(ellipse1);  
button1.push(text1);
```
- ```
button1.click(function(evt) {
 ellipse1.animate({fill:"red", "stroke-width": 20}, 2000, "bounce");
 text1.animateWith(ellipse1, null, {"font-size": 60}, 2000,
"bounce");
});
```

# Exercise

- Try to animate your Logo in Assignment 2