



HTML 5: The New Web

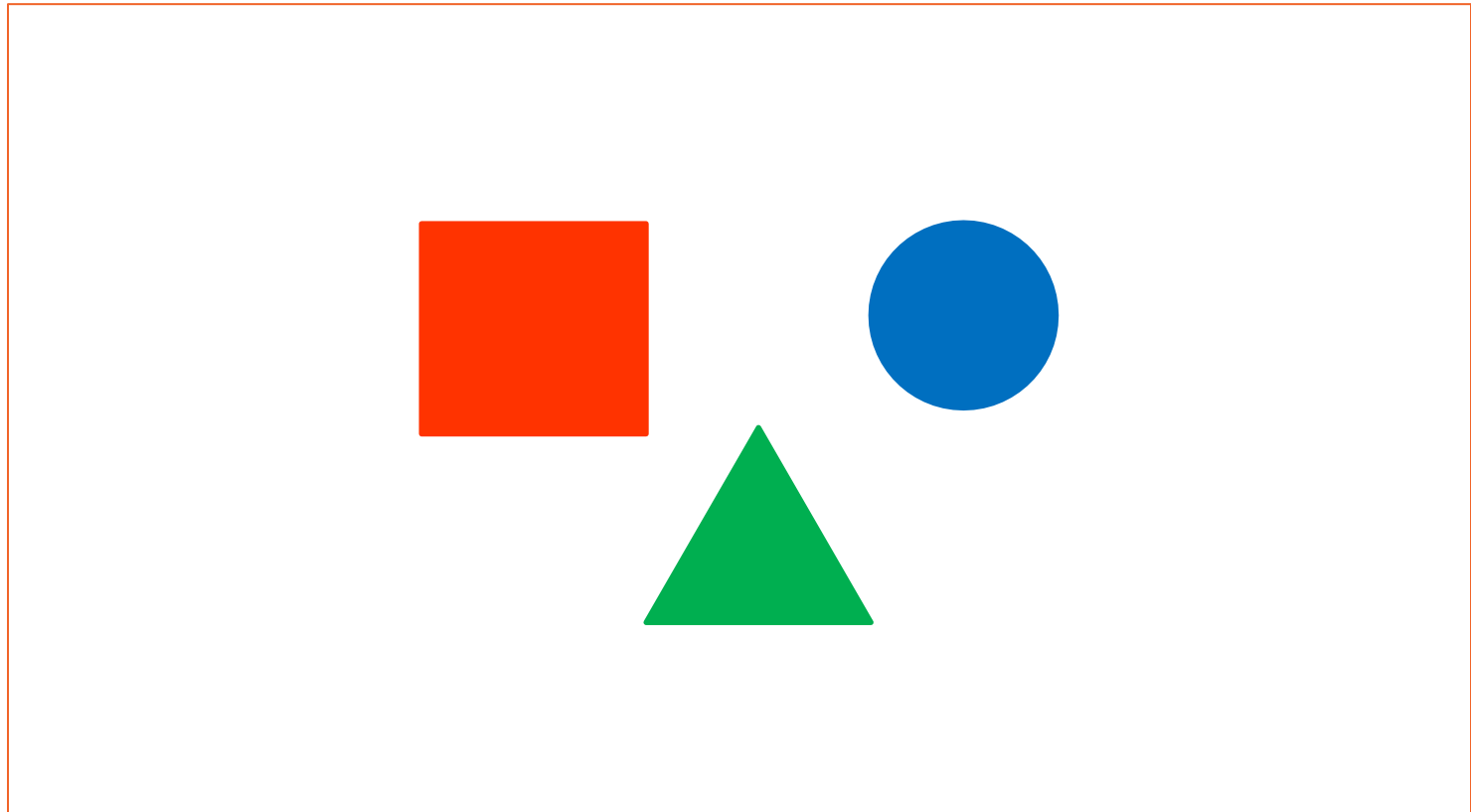
Lecture 2

Canvas

Let's learn it !

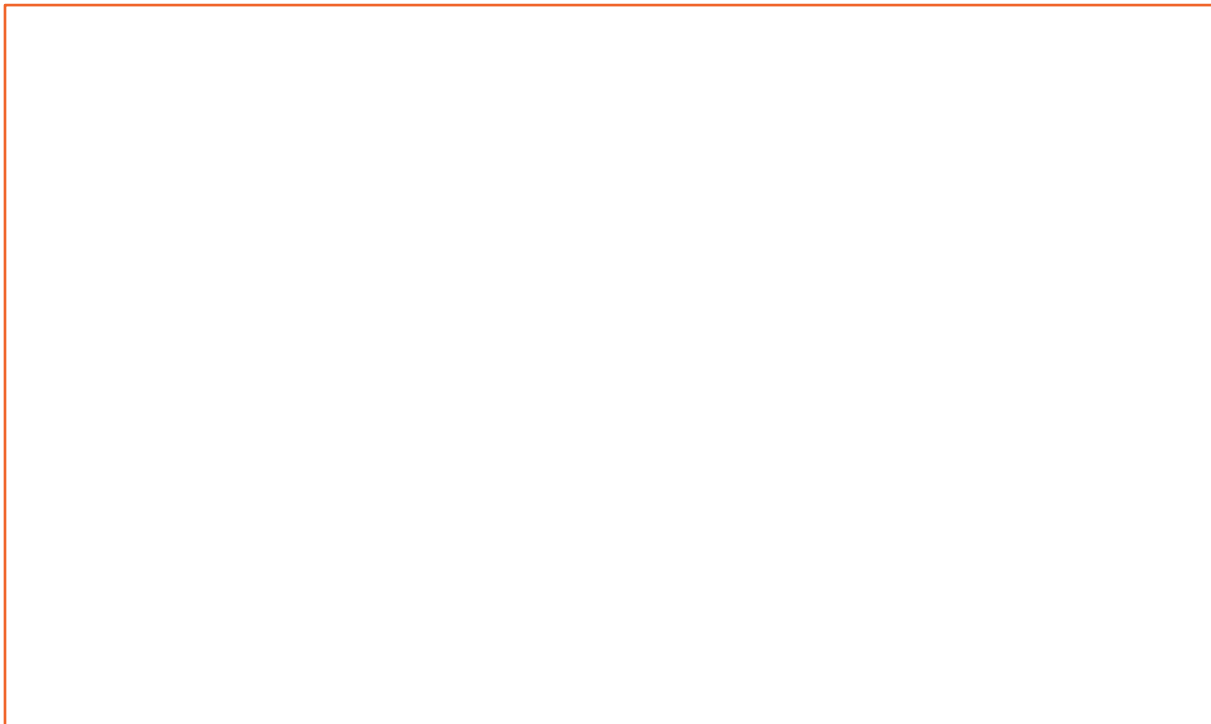


The HTML `<canvas>` element is used to draw graphics, on the fly, via JavaScript.



Create Canvas Board

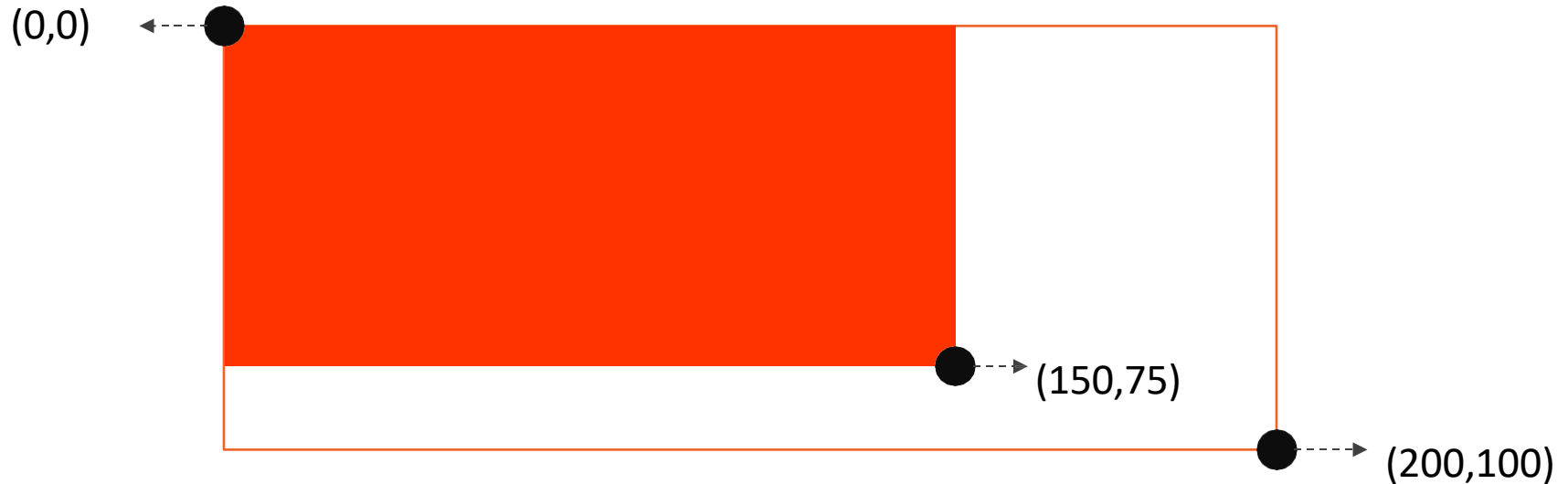
```
<canvas id="my-canvas" width="200" height="100"  
  style = "border:1px solid #000000;">  
</canvas>
```



Draw Rectangle

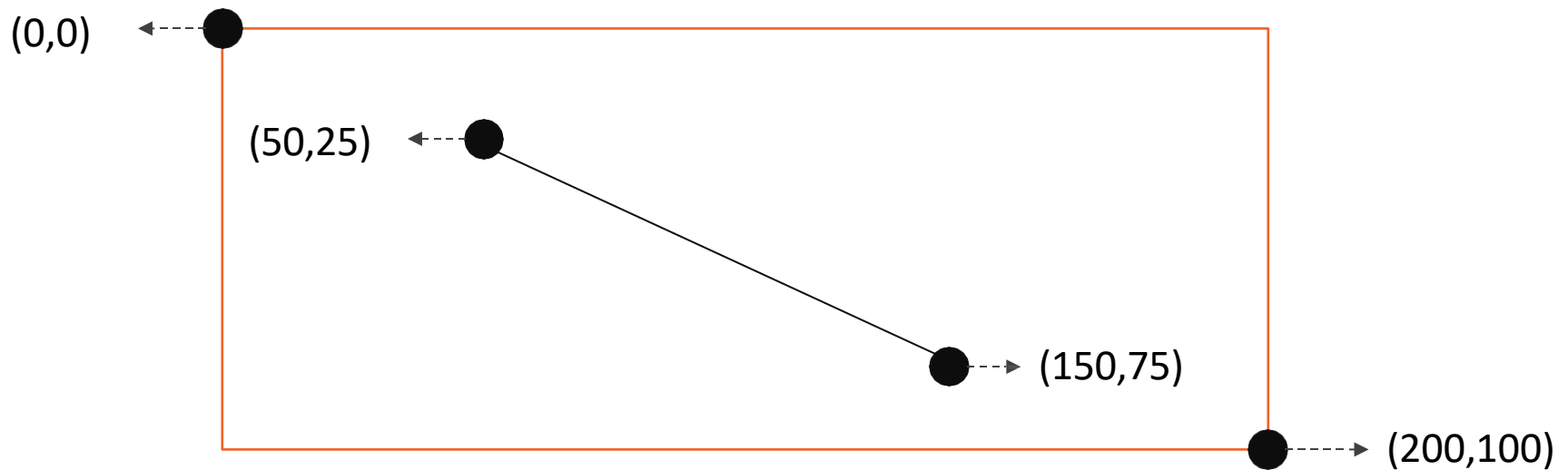
```
<script>  
    var canvas = document.getElementById("my-canvas");  
    var cContext = canvas.getContext("2d");  
    cContext.fillStyle = "#FF0000";  
    cContext.fillRect(0, 0, 150, 75);  
</script>
```

width, height



Draw Line

```
<script>  
    var cContext = canvas.getContext("2d");  
    cContext.moveTo(50,25);  
    cContext.lineTo(150,75);  
    cContext.stroke();  
</script>
```



Draw Circle

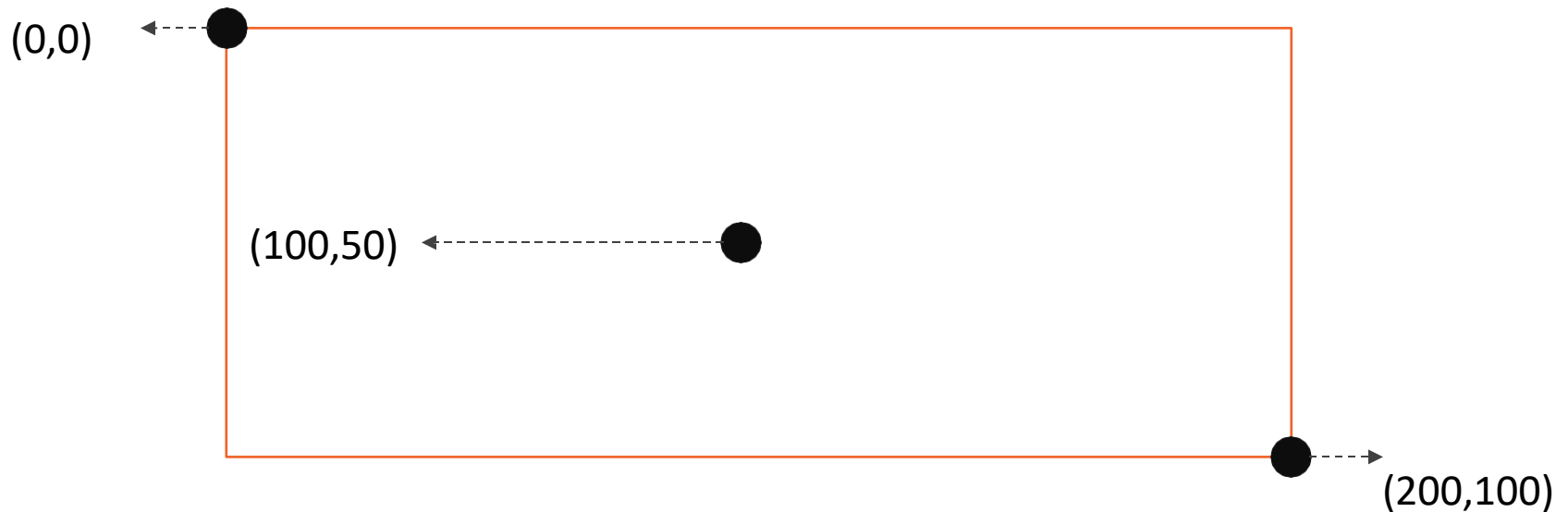
```
<script>
```

```
var cContext = canvas.getContext("2d");
```

```
cContext.beginPath();
```

```
cContext.arc(100, 50,
```

```
</script>
```



Draw Circle

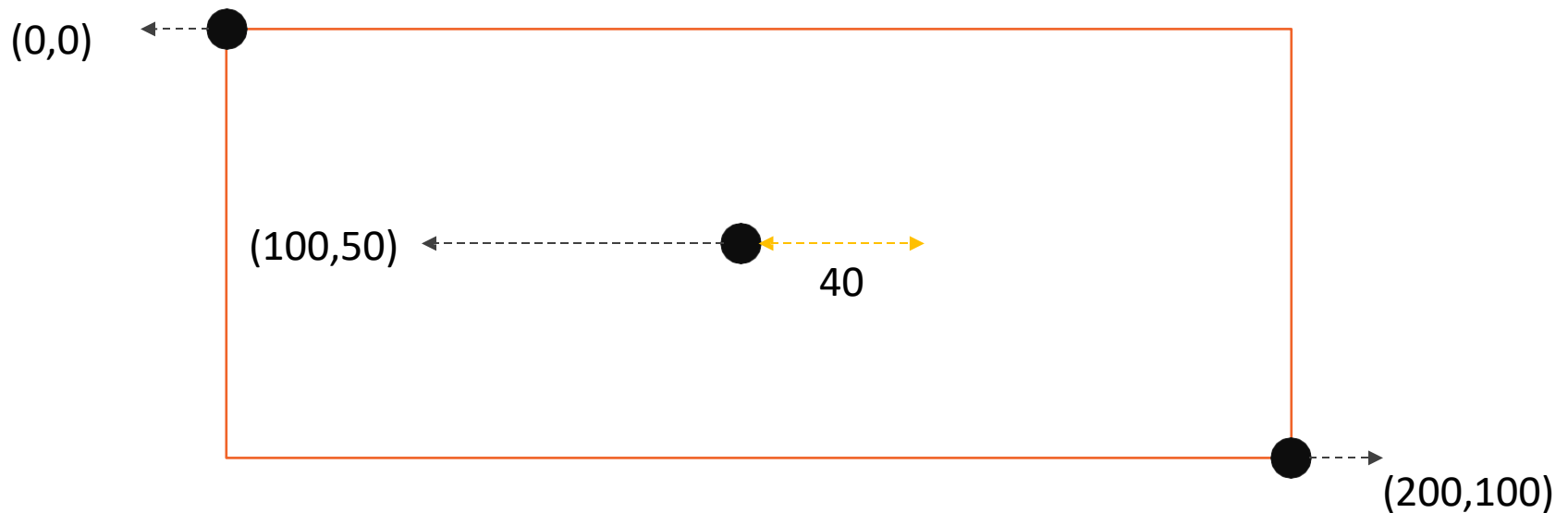
```
<script>
```

```
var cContext = canvas.getContext("2d");
```

```
cContext.beginPath();
```

```
cContext.arc(100, 50, 40,
```

```
</script>
```

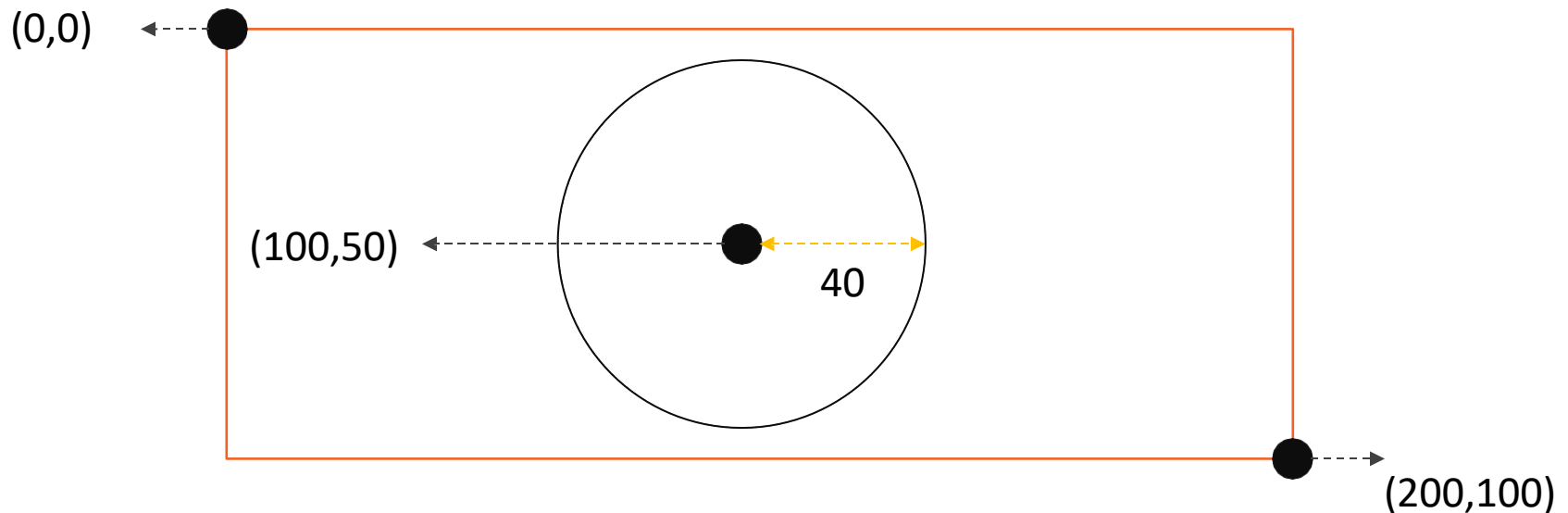


Draw Circle

```
<script>
```

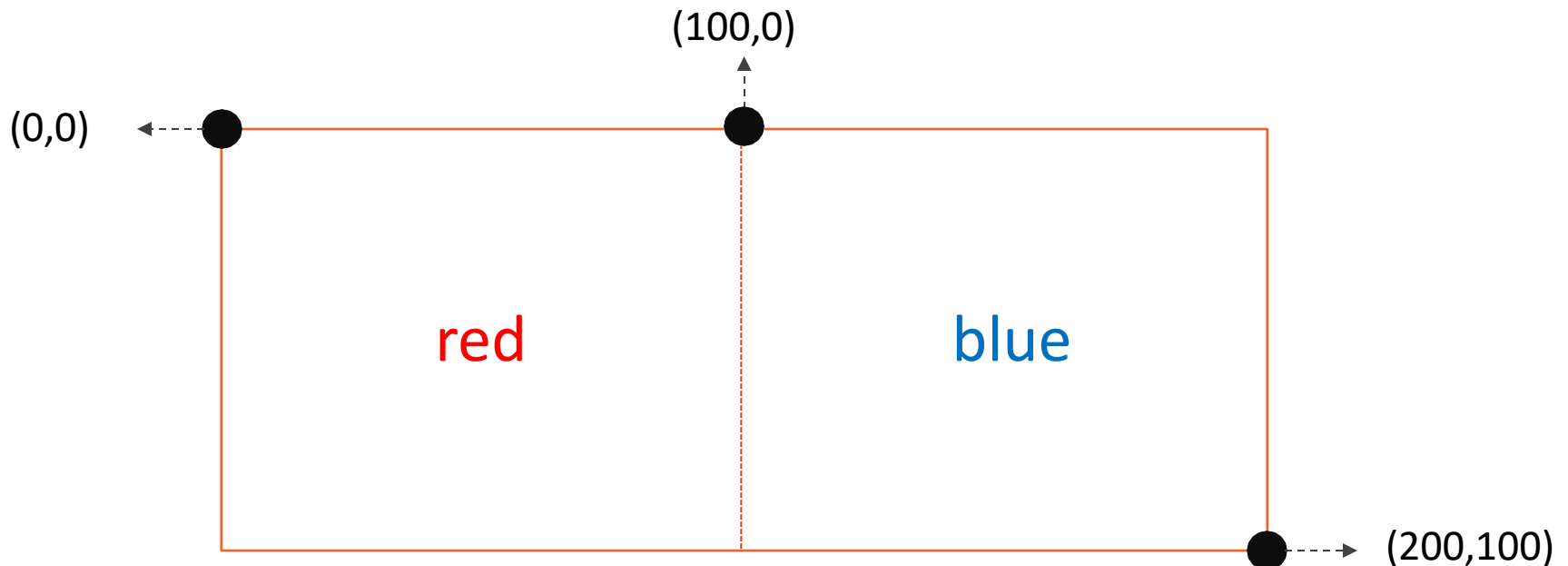
```
var cContext = canvas.getContext("2d");  
cContext.beginPath();  
cContext.arc(100, 50, 40, 0, 2 * Math.PI);  
cContext.stroke();
```

```
</script>
```



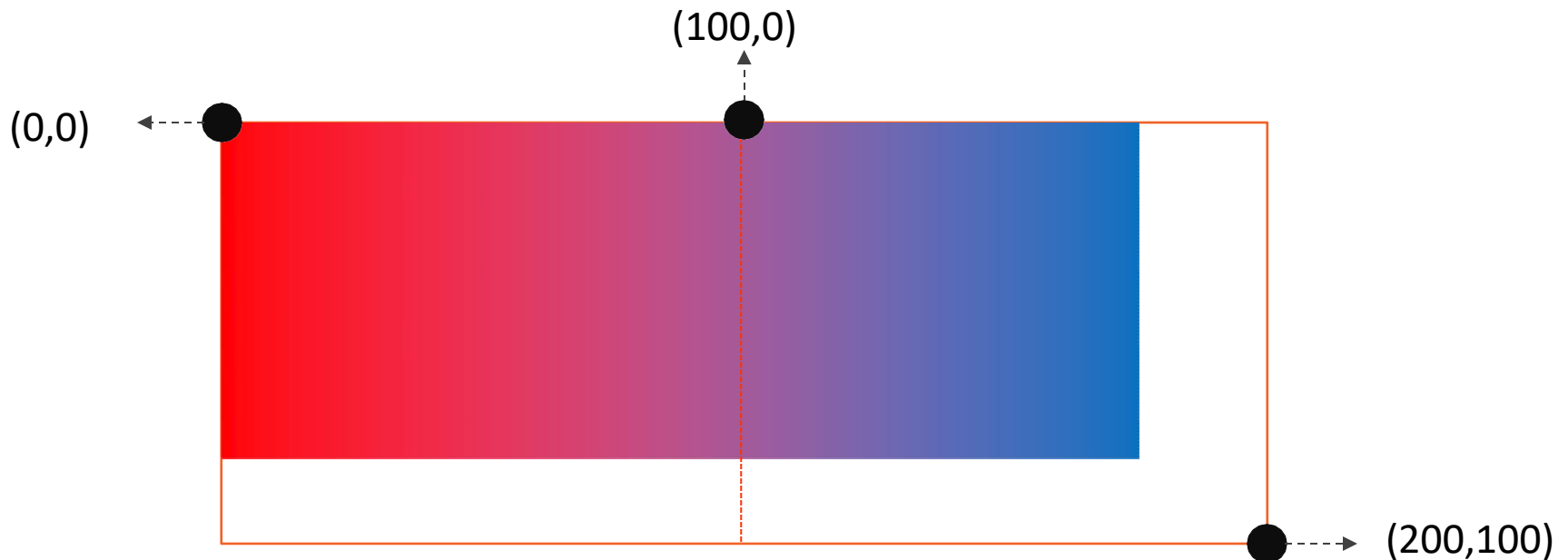
Draw Gradient

```
var grd = cContext.createLinearGradient(0,0,200,0);  
grd.addColorStop(0,"red");  
grd.addColorStop(1,"blue");  
cContext.fillStyle = grd;
```



Draw Gradient

```
var grd = cContext.createLinearGradient(0,0,200,0);  
grd.addColorStop(0,"red");  
grd.addColorStop(1,"blue");  
cContext.fillStyle = grd;  
cContext.fillRect(0,0,150,75);
```



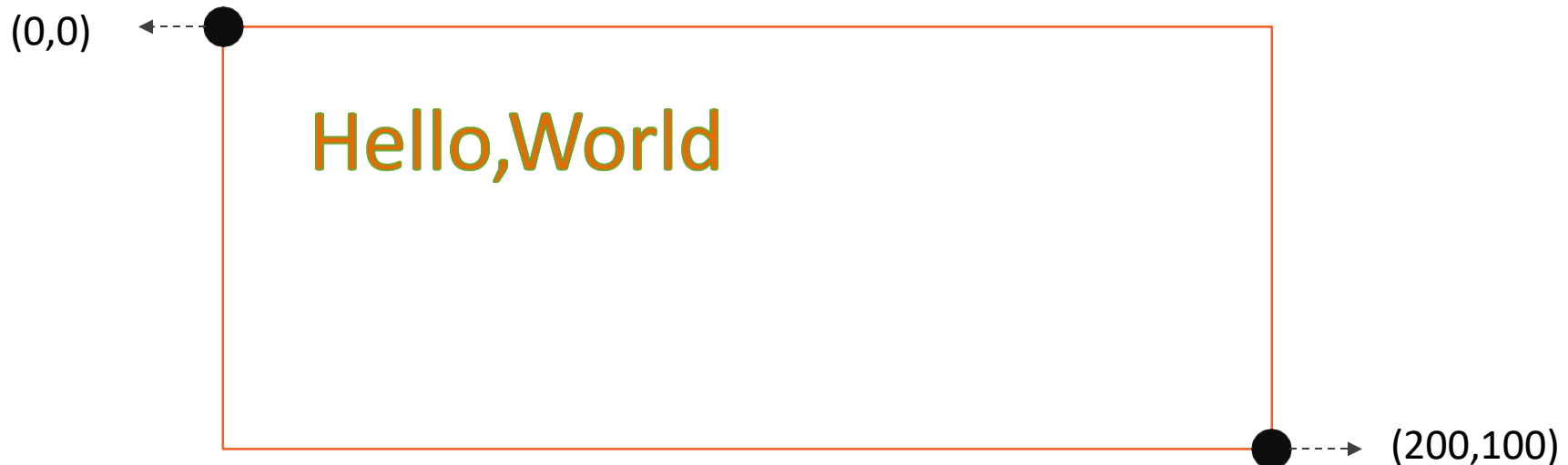
Draw Text

```
var ctx = canvas.getContext("2d");  
ctx.font = "30px Arial";  
ctx.fillStyle="#F0B326";  
ctx.strokeStyle="#0FA30A";  
ctx.strokeText("Hello World",10,50);
```



Draw Text

```
var ctx = canvas.getContext("2d");  
ctx.font = "30px Arial";  
ctx.fillStyle="#F0B326";  
ctx.strokeStyle="#0FA30A";  
ctx.strokeText("Hello World",10,50);  
ctx.fillText("Hello World",10,50);
```

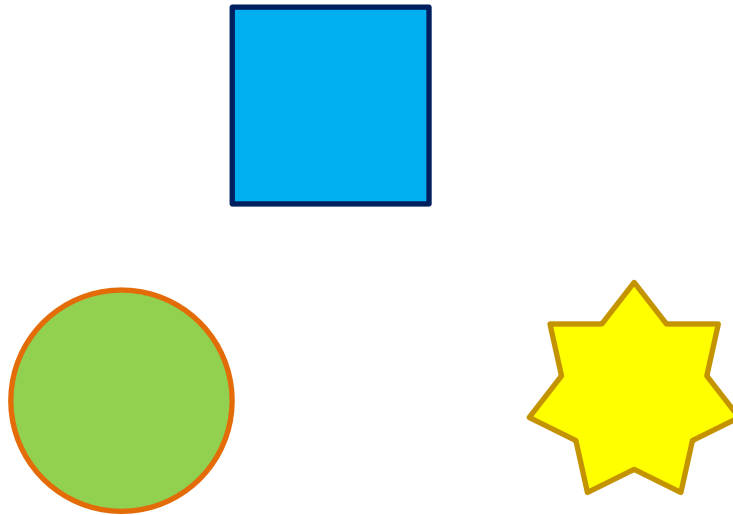


SVG

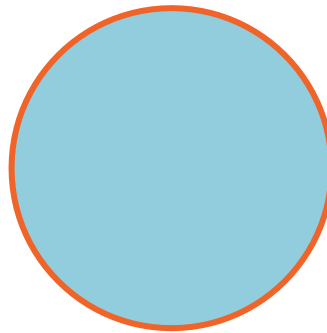
Scalable Vector Graphics



SVG stands for Scalable Vector Graphics, It is used to define graphics for the Web



```
<svg width="100" height="100">  
  <circle cx="50" cy="50" r="40" stroke="orange"  
    stroke-width="4" fill="blue" />  
</svg>
```



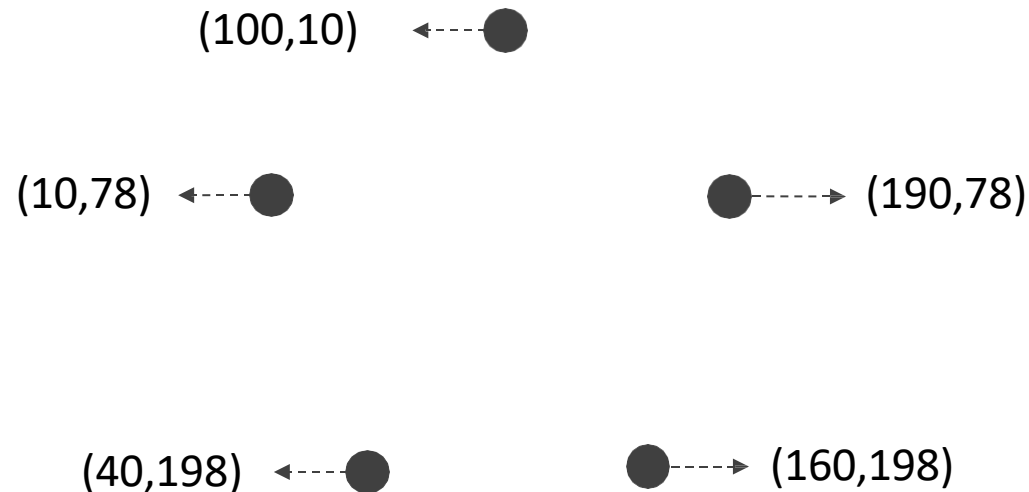
Rectangle

```
<svg width="200" height="100">  
  <rect width="200" height="100" x="50" y="20"  
    style="fill:rgb(0,0,255);stroke-width:10;" />  
</svg>
```



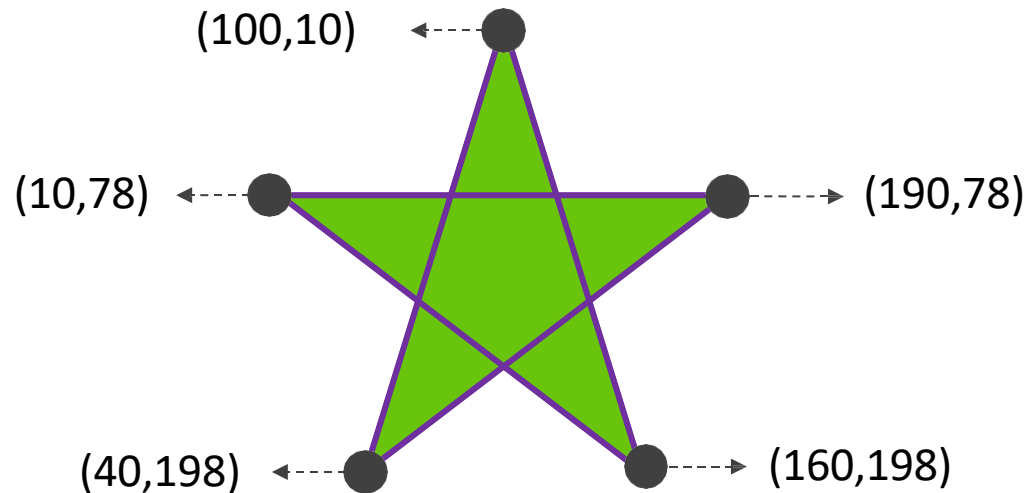
Polygon

```
<svg width="200" height="100">  
  <polygon points="100,10 40,198 190,78 10,78 160,198"  
    style="fill:lime; stroke:purple; stroke-width:5;/>  
</svg>
```



Polygon

```
<svg width="200" height="100">  
  <polygon points="100,10 40,198 190,78 10,78 160,198"  
    style="fill:lime; stroke:purple; stroke-width:5;/>  
</svg>
```



Path and Stroke

```
<svg width="200" height="100">
  <g fill="none" stroke="black">
    <path stroke-width="2" d="M5 20 L215 0" />
    <path stroke-linecap="round" d="M5 40 L215 0" />
    <path stroke-dasharray="10,10" d="M5 60 L215 0" />
  </g>
</svg>
```

(5,20) ← ● ————— ● → (220,20)

(5,40) ← ● ————— ● → (220,40)

(5,60) ← ● - - - - - ● → (220,60)



Drag & Drop

Drag it from there and Drop it there



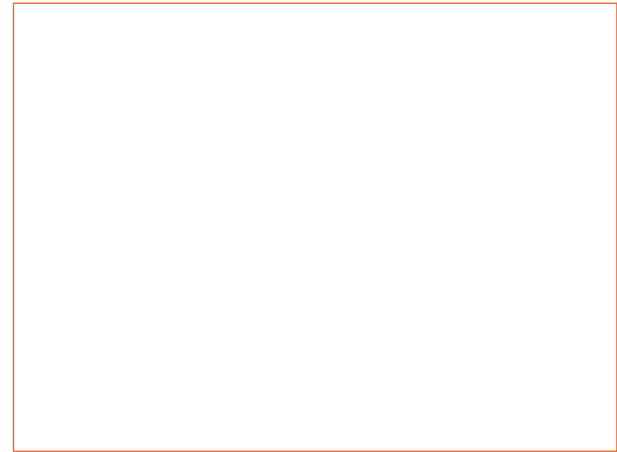
How does It work?

```
<img draggable='true' src='html5.png' />
```

Container 1



Container 2



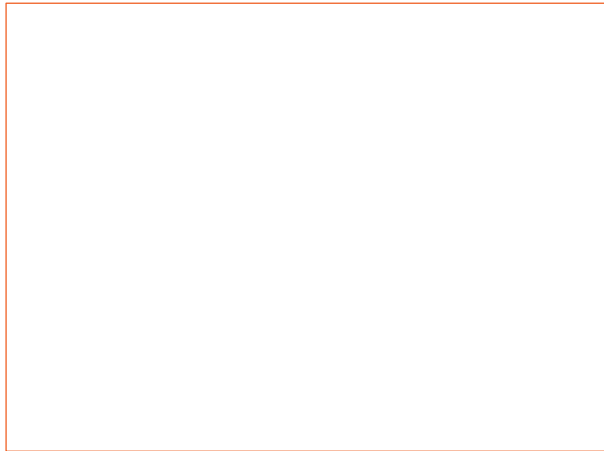
Drag Start



How does It work?

```
<img draggable='true' src='html5.png' />
```

Container 1



Container 2



Drop



Data Transfer Object

Data Transfer Object is an object that shared between all drag and drop events

```
event.dataTransfer.setData(key, value)
```

```
event.dataTransfer.getData(key)
```

Example

```
img.addEventListener("dragstart", function(e) {  
  
    e.dataTransfer("id", e.target.id);  
  
});
```



App of the Day



Art Board App

Thank You