WEB TECHNOLOGIES

HTML 5 – Canvas & SVG

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HTML5 - Canvas

Canvas element

- Uses JavaScript to draw graphics on a web page
- A rectangular area, and you control every pixel of it

Syntax

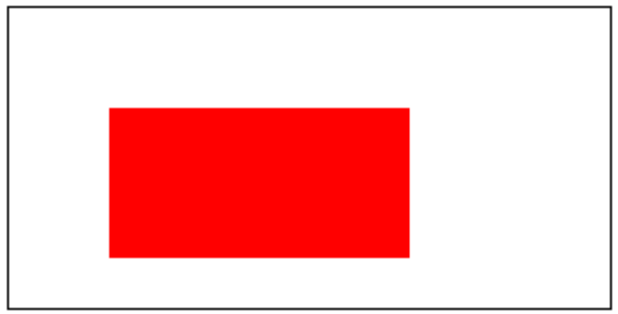
```
<canvas id="myCanvas" width="200" height="100">
    Canvas is not supported
</canvas>
```

HTML5 - Canvas

Canvas – context object

- The canvas element has no drawing abilities of its own. All drawing must be done inside a JavaScript using the context object

```
<script type="text/javascript">
    var c=document.getElementById("myCanvas");
    var ctx=c.getContext("2d");
    ctx.fillStyle="#FF0000";
    ctx.fillRect(50,50,150,75);
</script>
```



HTML5 - Canvas

Canvas – context methods

Method	Description
fillRect(x, y, width, height)	Draws a filled rectangle
strokeRect(x, y, width, height)	Draws a rectangular outline
clearRect(x, y, width, height)	Clears the specified rectangular area, making it fully transparent
moveTo(x, y)	Moves the pen to the coordinates specified by x and y
lineTo(x, y)	Draws a line from the current drawing position to the position specified by x and y
arc(x, y, r, sAngle, eAngle, anticlockwise)	Draws an arc centered at (x, y) with radius r starting at sAngle and ending at eAngle going anticlockwise (defaulting to clockwise).
arcTo(x1, y1, x2, y2, radius)	Draws an arc with the given control points and radius, connected to the previous point by a straight line

HTML5 - Canvas

Canvas – context methods (cntd.)

Method	Description
createLinearGradient(x1, y1, x2, y2)	Creates a linear gradient object with a starting point of (x1, y1) and an end point of (x2, y2).
createRadialGradient(x1, y1, r1, x2, y2, r2)	Creates a radial gradient. The parameters represent two circles, one with its center at (x1, y1) and a radius of r1, and the other with its center at (x2, y2) with a radius of r2.
fillText(text, x, y [, maxWidth])	Fills a given text at the given (x,y) position. Optionally with a maximum width to draw.
strokeText(text, x, y [, maxWidth])	Strokes a given text at the given (x,y) position. Optionally with a maximum width to draw.
drawImage(image, x, y [,width, height])	Draws the CanvasImageSource specified by the image parameter at the coordinates (x, y) with optional width and height

HTML5 – SVG

SVG Element

- SVG stands for Scalable Vector Graphics.
- SVG defines vector-based graphics using HTML elements
- SVG graphics do NOT lose any quality if they are zoomed or resized

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

HTML5 – SVG

SVG – Predefined Shape Element

- <rect width="300" height="100" style = "fill:rgb(0,0,255); stroke-width:3; stroke:rgb(0,0,0)" />
- <circle cx="50" cy="50" r="40" stroke="black" stroke-width="3" fill="red" />
- <ellipse cx="200" cy="80" rx="100" ry="50“ style = "fill:yellow; stroke:purple; stroke-width:2" />
- <polygon points="200,10 250,190 160,210" style = "fill:lime; stroke:purple; stroke-width:1" />
- <text x="0" y="15" fill="red" transform="rotate(30 20,40)">I love SVG</text>

THANK YOU

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