Unit 2: HTML5, JQuery and Ajax

HTML 5 <canvas> Tag

The Canvas API provides a means for drawing graphics via JavaScript and the HTML <canvas> element. It can be used for animation, game graphics, data visualization, photo manipulation, and real-time video processing. Canvas allows you to render graphics powered by JavaScript. Some of the Canvas context methods are following:

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

CODE:

```
<p>Before canvas.</p>
<canvas width="120" height="60"></canvas>
<p>After canvas.</p>
<script>
  let canvas = document.querySelector("canvas");
  let context = canvas.getContext("2d");
  context.fillStyle = "red";
  context.fillRect(10, 10, 100, 50);
</script>
```

Results:

Before canvas.

After canvas.

HTML <svg>Tag

The svg element is a container that defines a new coordinate system and viewport. It is used as the outermost element of SVG documents, but it can also be used to embed a SVG fragment inside an SVG or HTML document.

The xmlns attribute changes an element (and its children) to a different XML namespace. This namespace, identified by a URL, specifies the dialect that we are currently speaking. The <circle> and <rect> tags, which do not exist in HTML, do have a meaning in SVG—they draw shapes using the style and position specified by their attributes.

These tags create DOM elements, just like HTML tags, that scripts can interact with.

CODE:

```
<p>Normal HTML here.</p>
<svg xmlns="http://www.w3.org/2000/svg">
  <circle r="50" cx="50" cy="50" fill="red"/>
  <rect x="120" y="5" width="90" height="90"
        stroke="blue" fill="none"/>
</svg>
```

Results:

Normal HTML here.