

Scripting for Multimedia

LECTURE 19: DRAWING BY USING THE <CANVAS>
ELEMENT

The <canvas> element reference

- If a browser does not support it, the content in <canvas> element will be displayed

```
<canvas id="myCanvas" width="800" height="600">
```

```
    You need a browser that supports HTML5!
```

```
</canvas>
```

- The <canvas> element exposes abundant functionality through its canvas content, which is accessible using JavaScript
 - height
 - width
 - getContext()
 - toDataURL()

CanvasRenderingContext2D content object

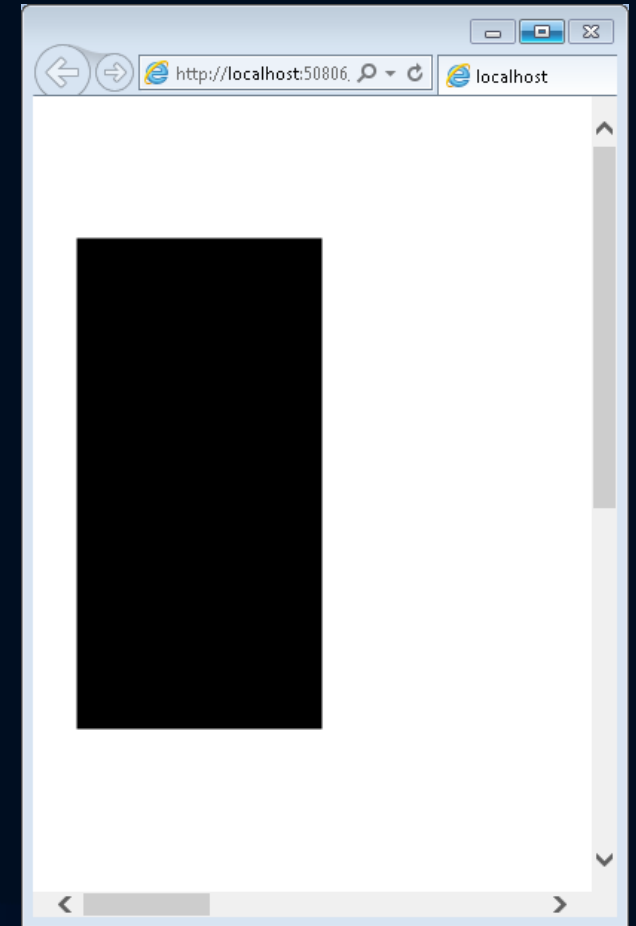
- <canvas> is a graphics container
- The content object is used to draw on the canvas
 - addColorStop()
 - arc()
 - arcTo()
 - beginPath()
 - bezierCurveTo()
 - clearRect()
 - ...

Implementing the canvas

- Get a reference to the canvas context
 - using `getContext('2d')`
- `CanvasRenderingContext2D` is a *context* object

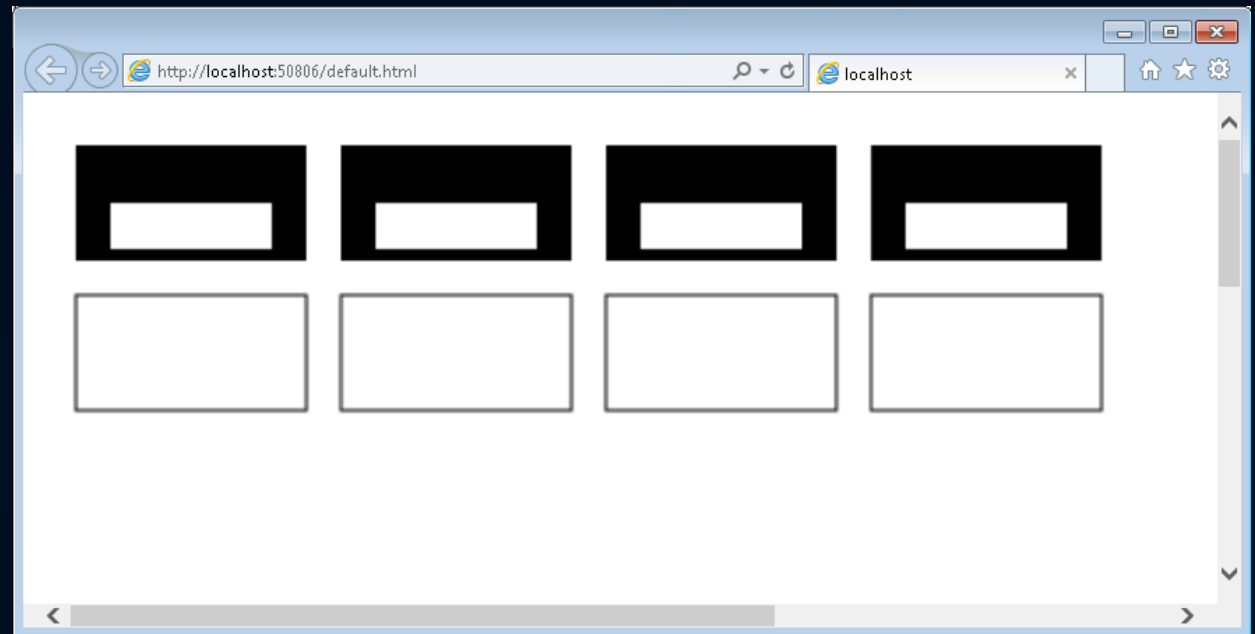
- Example of creation of the context object

```
$(document).ready(function () {  
    drawSomething();  
});  
function drawSomething() {  
    var canvas = document.getElementById('myCanvas');  
    var ctx = canvas.getContext('2d');  
    ctx.fillRect(10, 50, 100, 200);  
}
```



Drawing rectangles

- Methods
 - `clearRect(x,y,w,h)`
 - `fillRect(x,y,w,h)`
 - `strokeRect(x,y,w,h)`
- See drawRectangles example

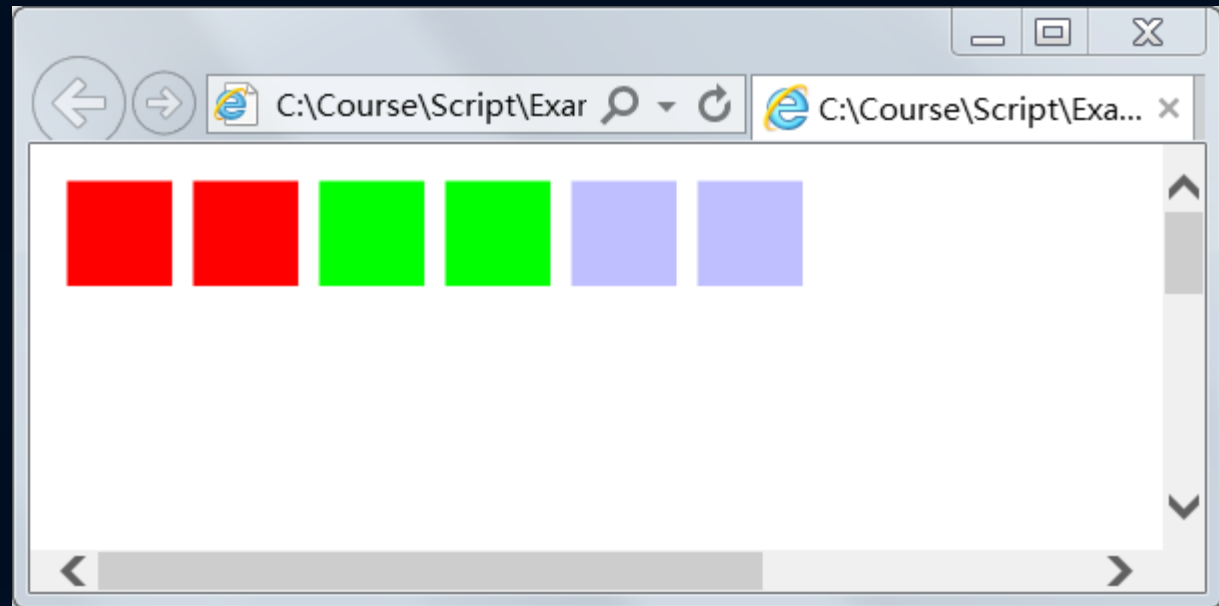


Configuring the drawing state

- The canvas context has properties
 - What is the fill color?
 - What is the line thickness and color?
 - ...

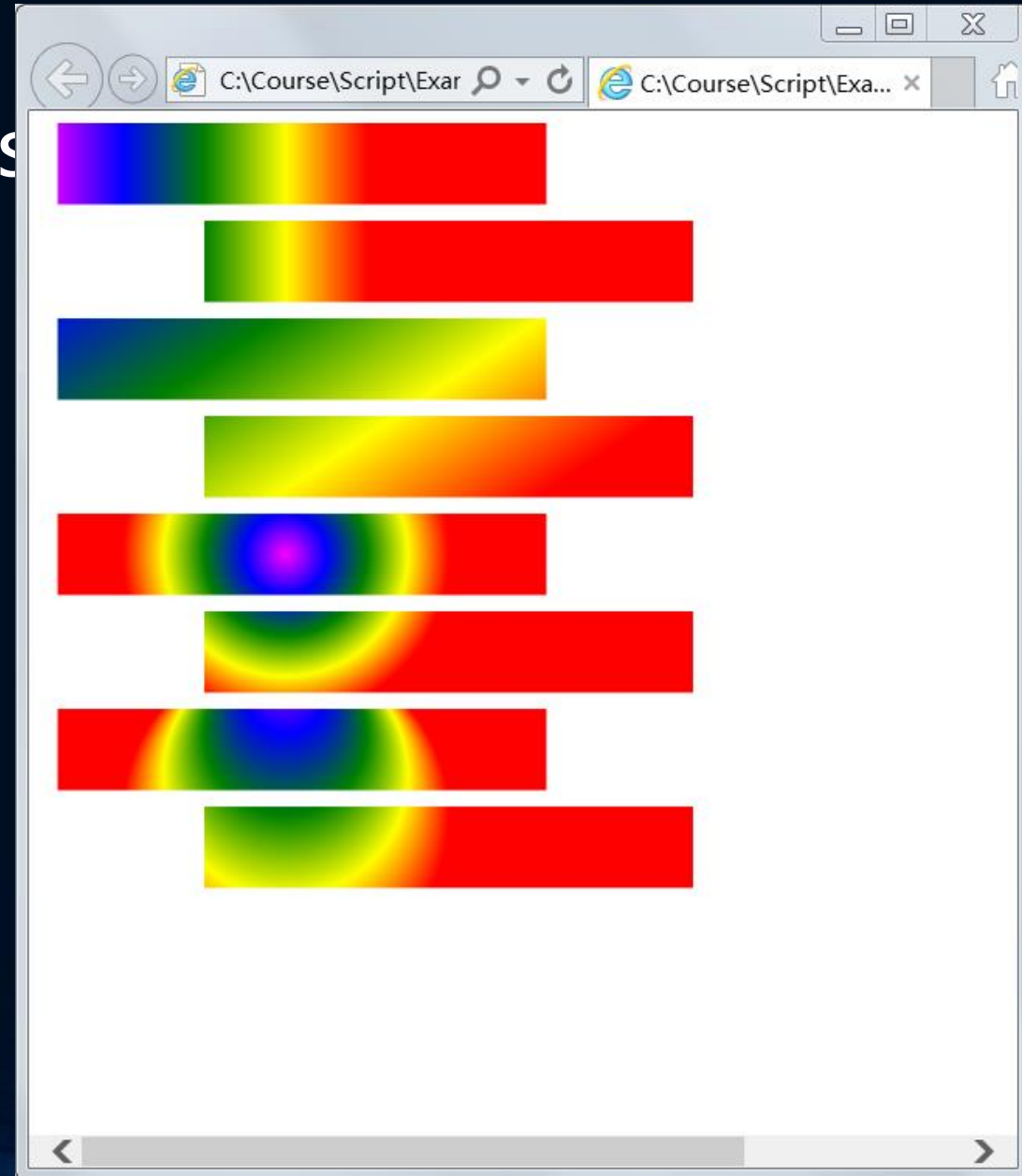
Configuring the drawing state

- Setting fillStyle
 - CSS color
 - See fillColor example



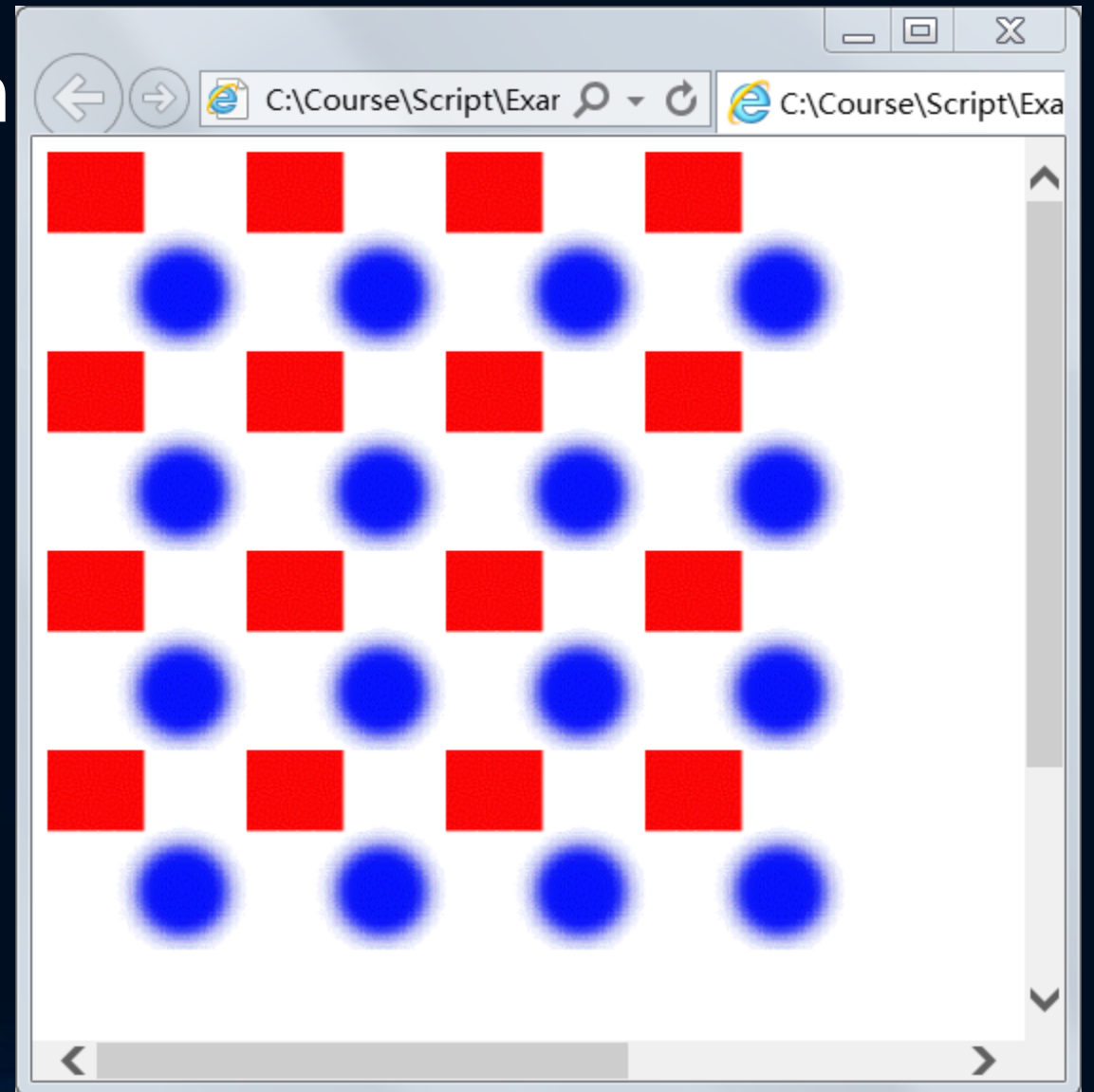
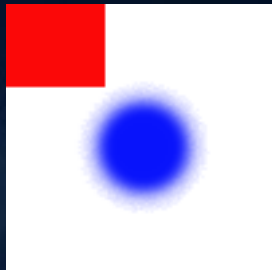
Configuring the drawing s

- Setting fillStyle
 - Gradient
 - Create a gradient fill using a CanvasGradient object created by createLinearGradient() or createRadialGradient()
 - See fillGradient example



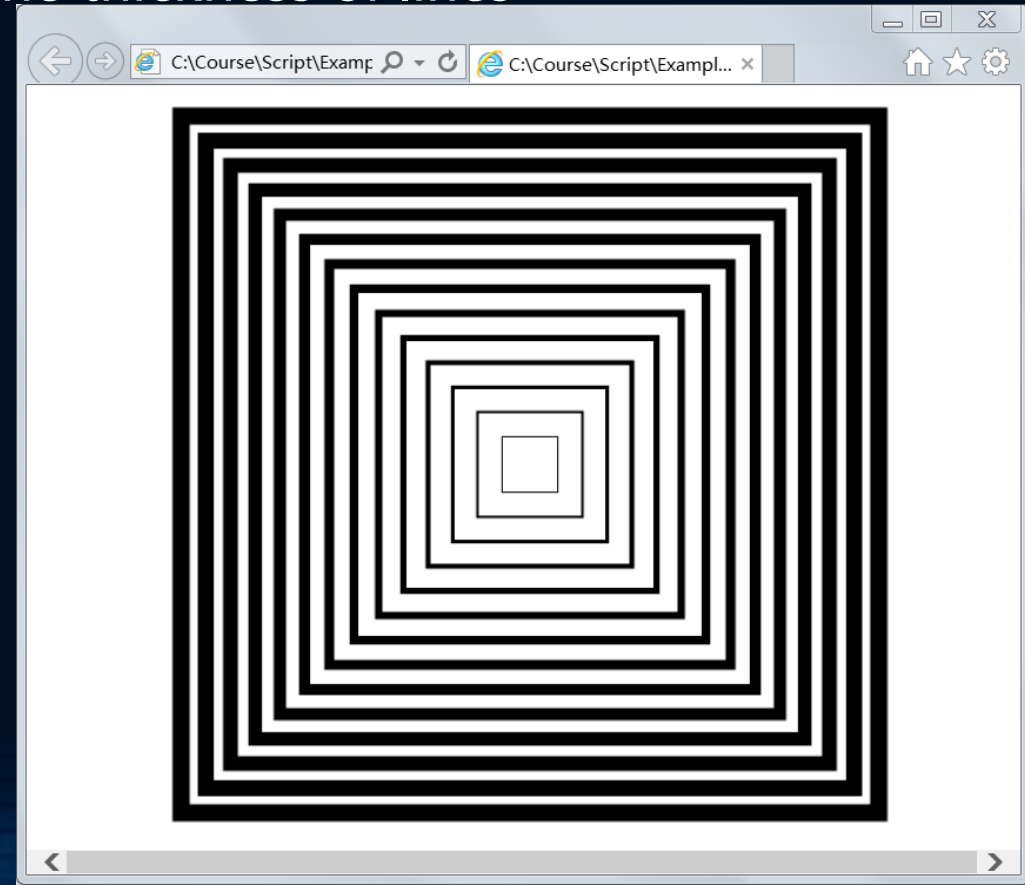
Configuring the drawing

- Setting fillStyle
 - Pattern
 - See fillPattern example



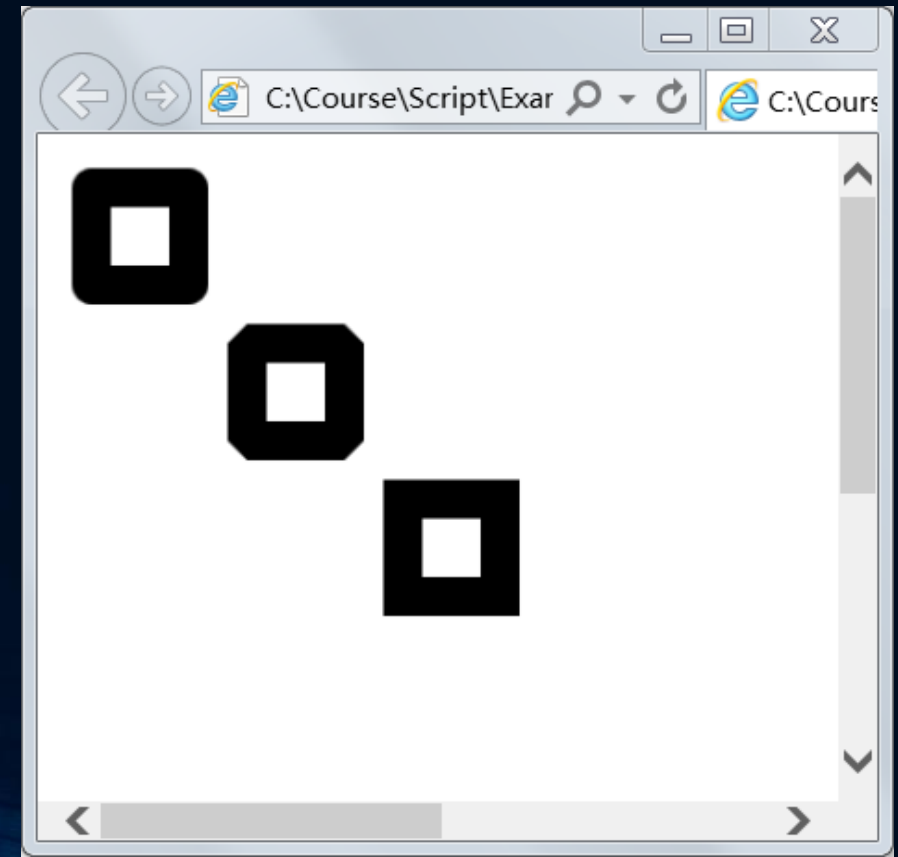
Configuring the drawing state

- Setting linewidth
 - The lineWidth property specifies the thickness of lines
 - See drawLineWidth example



Configuring the drawing state

- Setting linJoin
 - The linJoin property specifies the way lines that join each other
 - value: round, bevel, or miter (default)
 - See drawLineJoin example



Configuring the drawing state

- Setting strokeStyle