HTML Canvas

HTML Canvas 介紹

Canvas (basic support) 📄 - LS

Usage
Global

% of all users ?

97.98% + 0.92% = 98.9%

Method of generating fast, dynamic graphics using JavaScript.

Current aligned   Usage relative   Date relative   Apply filters   Show all   ?

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Opera Mobile *	Chrome for Android	Firefox for Android	UC Browser for Android
6-8		[1] 2-3.5		[1] 3.1-3.2				[1] 2.1-2.3				
9-10	12-79	3.6-73	4-79	4-12.1	10-65	3.2-13.2		3-4.4.4	12-12.1			
11	80	74	80	13	66	13.3	[2] all	80	46	80	68	12.12
		75-76	81-83	13.1-TP		13.4						

Notes   Sub-features (5)   Known issues (6)   Resources (10)   Feedback

For screen readers, IE, Chrome & Firefox support the accessible canvas element sub-DOM.

Firefox & Chrome also support the drawfocus ring.

[1] Does not support `toDataURL()`

[2] Opera Mini supports the canvas element, but is unable to play animations or run other more complex applications.

HTML Canvas 介紹

圖表, combine photos, or 動畫, 遊戲

SVG	HTML Canvas
SVG has better scalability. So it can be printed with high quality at any resolution	Canvas has poor scalability. Hence it is not suitable for printing on higher resolution
SVG gives better performance with smaller number of objects or larger surface.	Canvas gives better performance with smaller surface or larger number of objects.
SVG can be modified through script and CSS	Canvas can be modified through script only
SVG is vector based and composed of shapes.	Canvas is raster based and composed of pixel.

HTML Canvas 標籤

1. width

2. height

3. getContext()

4. toDataURL()

```html
<canvas id="canvas" width="100" height="100"></canvas>
```

```javascript
var ctx = document.getElementById('canvas').getContext('2d');
```

HTML Canvas

- 數學

- OOP

HTML Canvas API

1. 管理狀態：save(), restore()

2. 變形：scale(), rotate(), translate(), transform(), setTransform()

3. 畫面組成：globalAlpha, globalCompositionOperation

4. 色彩與風格：strokeStyle, fillStyle, createLinearGradient(), createRadialGradient(
   createPattern()

5. 線條邊角及組合：lineWidth, lineCap, lineJoin, miterLimit

6. 陰影：shadowOffsetX, shadowOffsetY, shadowBlur, shadowColor

7. 方形繪出：clearRect(), fillRect(), strokeRect()

8. 路徑API：beginPath(), closePath(), moveTo(), lineTo(), quadraticCurveTo(),
   bezierCurveTo(), arcTo(), rect(), arc(), fill(), stroke(), clip(), isPointInPath()

9. 焦點管理：drawFocusRing()

10. 文字：font, textAlien, textBaseline, fillText(), strokeText(), measureText()

11. 影像：drawImage(), createImageData(), getImageData(), putImageData()

HTML Canvas 範例

Codepen

three.js

實作