JavaScript fillText

Summary: in this tutorial, you'll learn how to use the JavaScript `fillText()` method to draw a text string to a canvas.

Introduction to the JavaScript fillText() method

The `fillText()` is a method of a 2D drawing context. The `fillText()` method allows you to draw a text string at a coordinate with the fill derived from the current `fillStyle` .

The following shows the syntax of the `fillText()` method:

```
ctx.fillText(text, y , y [, maxWidth])
```

The `fillText()` accepts the following parameters:

- `text` is the text string to draw.
- `x` and `y` is the x-axis and y-axis coordinates of the point at which the method starts drawing text.
- `maxWidth` is the maximum number of pixels wide that the method will render the text. By default, the text width will have no limit if you omit the `maxWidth` argument. However, if you pass the `maxWith` value, the method will try to adjust the kerning or select a more condensed font for the text to make it fit in the specified width.

JavaScript fillText() example

Let's take some examples of using the JavaScript `fillText()` method.

1) Draw a filled text example

This example draws the words `"Hello, Canvas!"` on a canvas using the `fillText()` method.

HTML

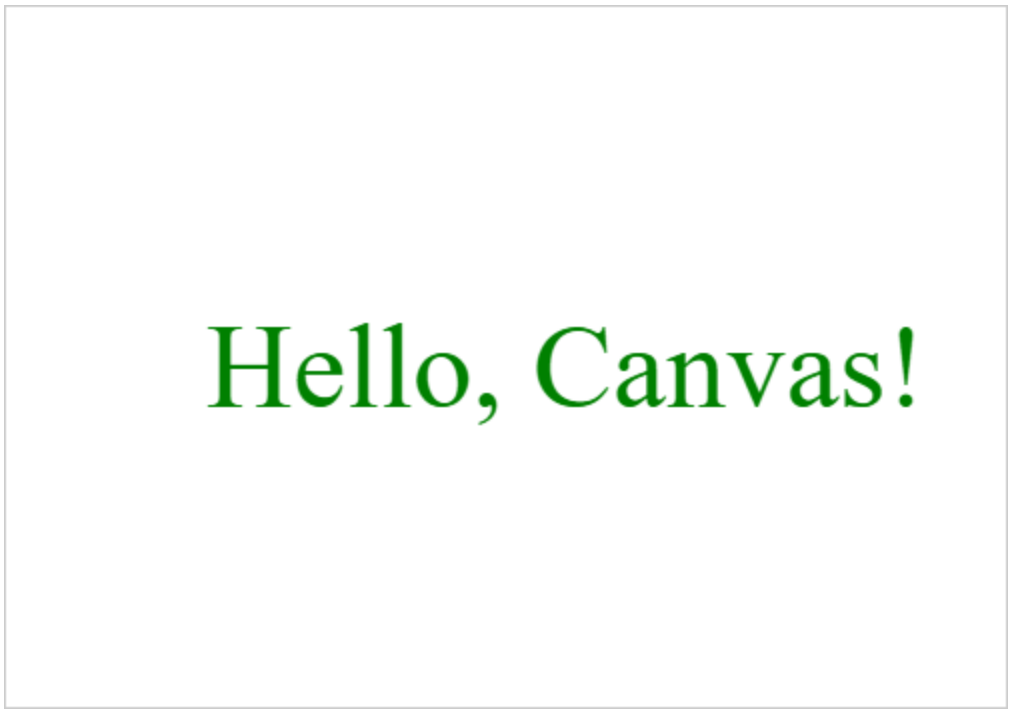
```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>JavaScript fillText Demo</title>
    <link rel="stylesheet" href="css/style.css">
</head>
<body>

    <canvas id="canvas" height="400" width="500">
    </canvas>

    <script src="js/app.js"></script>

</body>
</html>
```

JavaScript

The following shows the JavaScript code that draws the text:

```
const canvas = document.getElementById('canvas');
if (canvas.getContext) {
    const ctx = canvas.getContext('2d');
    ctx.fillStyle = 'green';
    ctx.font = '60px san-serif';
    ctx.fillText('Hello, Canvas!', 100, 200);
}
```

Output:



How it works.

- First, select the canvas element using the `querySelector()` method.
- Second, get the reference to the canvas 2D graphics context.
- Third, set the font to 60-pixel-tall san-serif. and the fill style is green.
- Finally, draw the text `'Hello, Canvas!'` starting at the coordinates `(100,200)` .

2) Constraint the text size

The following example draws the words `'Hello, Canvas!'` with a maximum with of 250px.

HTML

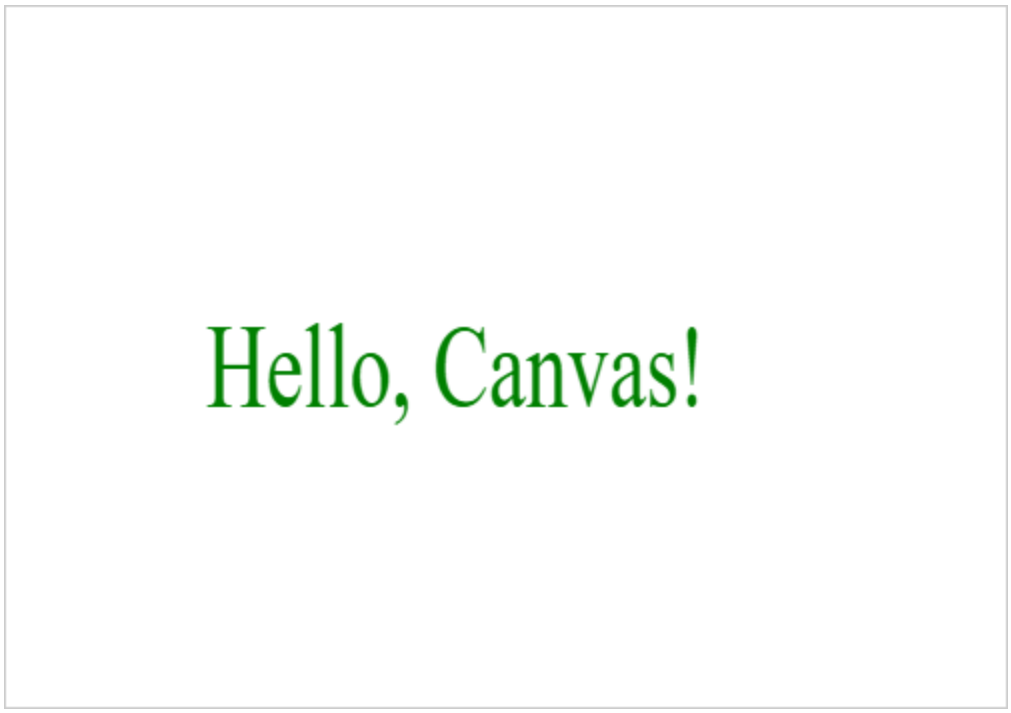
```
<canvas id="canvas" height="400" width="500">
</canvas>
```

JavaScript

```
const canvas = document.getElementById('canvas');
if (canvas.getContext) {
    const ctx = canvas.getContext('2d');
    ctx.fillStyle = 'green';
```

```
    ctx.font = '60px san-serif';
    ctx.fillText('Hello, Canvas!', 100, 200, 250);
}
```

Output:



Text alignments

To align the text on the canvas, you use the `textAlign` property:

```
ctx.textAlign = value;
```

The alignment is relative to the `x` of the `fillText()` method.

The `value` can be one of the following values:

- `'left'` – the text is left-aligned.
- `'right'` – the text is right-aligned.
- `'center'` – the text is centered.
- `'start'` – the text is aligned at the start of the line. It's left-aligned in the left-to-right locales and right-aligned in the right-to-left locales.

- `'end'` – the text is aligned at the end of the line. It's right-aligned in the left-to-right locales and left-aligned for the right-to-left locales.

The default value for the `texAlign` is `start`.

The following example demonstrates the various options of the `textAlign` property:

HTML

```
<canvas id="canvas" height="350" width="500">
</canvas>
```

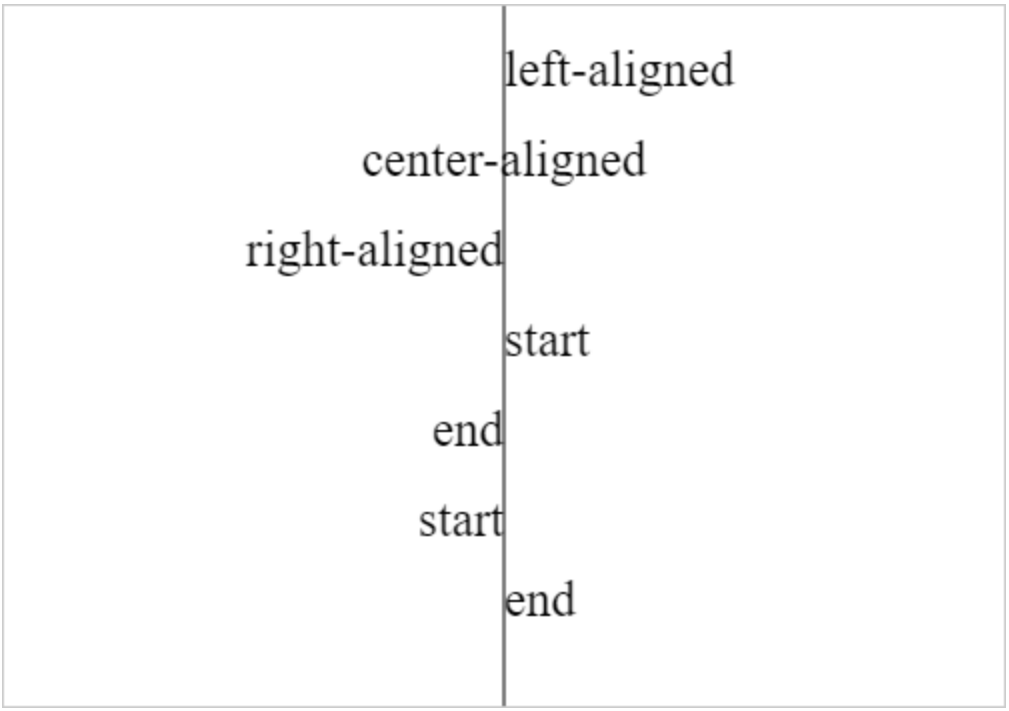
JavaScript

```
const canvas = document.getElementById('canvas');
const ctx = canvas.getContext('2d');
const x = canvas.width / 2;

ctx.beginPath();
ctx.moveTo(x, 0);
ctx.lineTo(x, canvas.height);
ctx.stroke();

ctx.font = '25px san-serif';

ctx.textAlign = 'left';
ctx.fillText('left-aligned', x, 40);

ctx.textAlign = 'center';
ctx.fillText('center-aligned', x, 85);

ctx.textAlign = 'right';
ctx.fillText('right-aligned', x, 130);

// LTR locale
canvas.setAttribute('dir', 'ltr');
ctx.textAlign = 'start';
ctx.fillText('start', x, 175);
ctx.textAlign = 'end';
```

```
ctx.fillText('end', x, 220);

// RTL locale
canvas.setAttribute('dir', 'rtl');
ctx.textAlign = 'start';
ctx.fillText('start', x, 265);
ctx.textAlign = 'end';
ctx.fillText('end', x, 305);
```

To change the locale to LTR or RTL, you set the `dir` attribute value of the canvas to `'ltr'` and `'rtl'` .

Here is the output:



Text baseline

To specify the text baseline for the drawing text, you use the `textBaseline` property of the 2D drawing context:

```
ctx.textBaseline = value;
```

The value of the `textBaseline` can be one of the following values:

- `'top'` – the text baseline is the top of the em square.
- `'hanging'` – the text baseline is the hanging baseline.
- `'middle'` – the text baseline is the middle of the em square.
- `'alphabetic'` – the text baseline is the alphabetic baseline. This is the default value.
- `'ideographic'` – the text baseline is ideographic. It's mainly used by Chinese, Japanese, and Korean scripts.
- `'bottom'` – the text baseline is the bottom of the bounding box.

Text baseline example

The following example illustrates various `textBaseline` values.

HTML

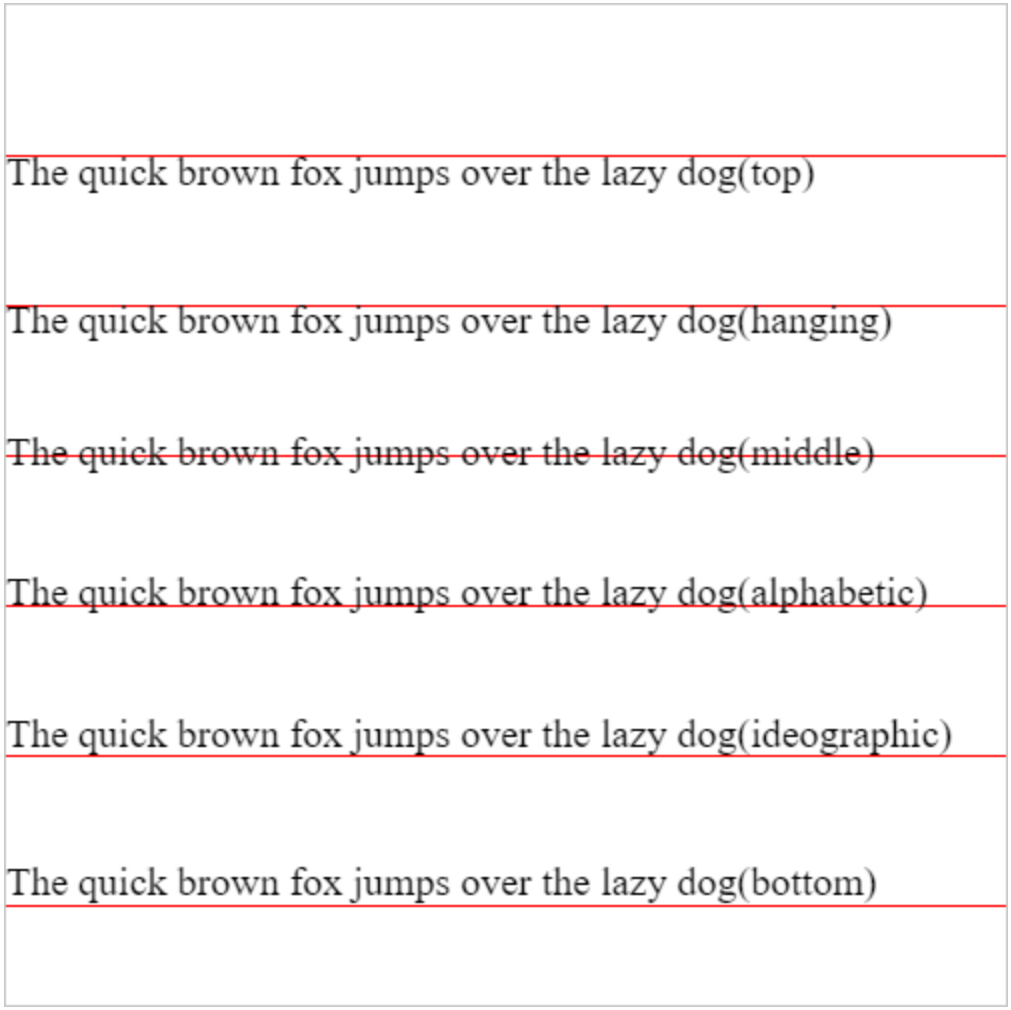
```
<canvas id="canvas" width="550" height="500"></canvas>
```

JavaScript

```
const canvas = document.getElementById('canvas');

if (canvas.getContext) {
    const ctx = canvas.getContext('2d');
    const baselines = ['top', 'hanging', 'middle', 'alphabetic', 'ideographic', 'bottom'];
    const str = 'The quick brown fox jumps over the lazy dog';
    ctx.font = '20px san-serif';
    ctx.strokeStyle = 'red';

    baselines.forEach((baseline, index) => {
        // set the text baseline
        ctx.textBaseline = baseline;

        const y = 75 + index * 75;
        // draw a line
        ctx.beginPath();
        ctx.moveTo(0, y + 0.5);
        ctx.lineTo(500, y + 0.5);
        ctx.stroke();
```

```
        // draw the text
        ctx.fillText(`${str}(${baseline})`, 0, y);
    });
}
```

Output:



Summary

- Use the JavaScript `fillText()` to draw a text string at a coordinate to a canvas.
- Use the `font`, `textAlign`, and `textBaseline` property to set the options for drawing text.