7

ADDING IMAGES

OVERVIEW

- Web image formats
- The `img` element
- Attributes for the img element
- Adding an SVG to a page

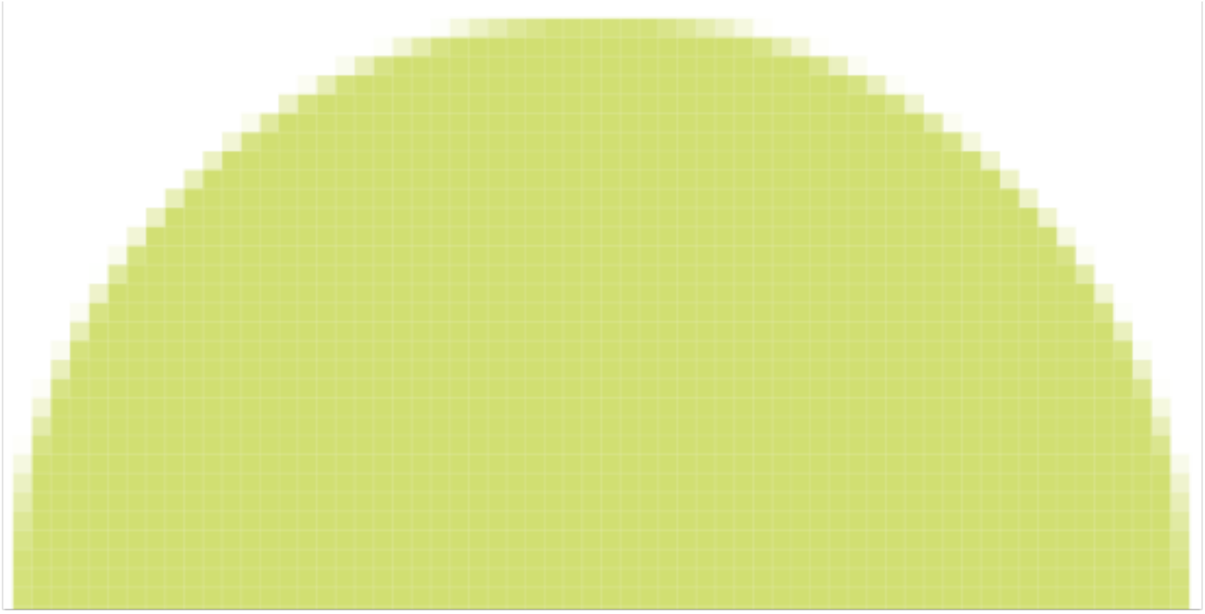
Web Image Formats

Image formats appropriate for web pages:

- PNG
- JPEG
- GIF
- SVG
- WebP (up and coming, not yet widely supported)

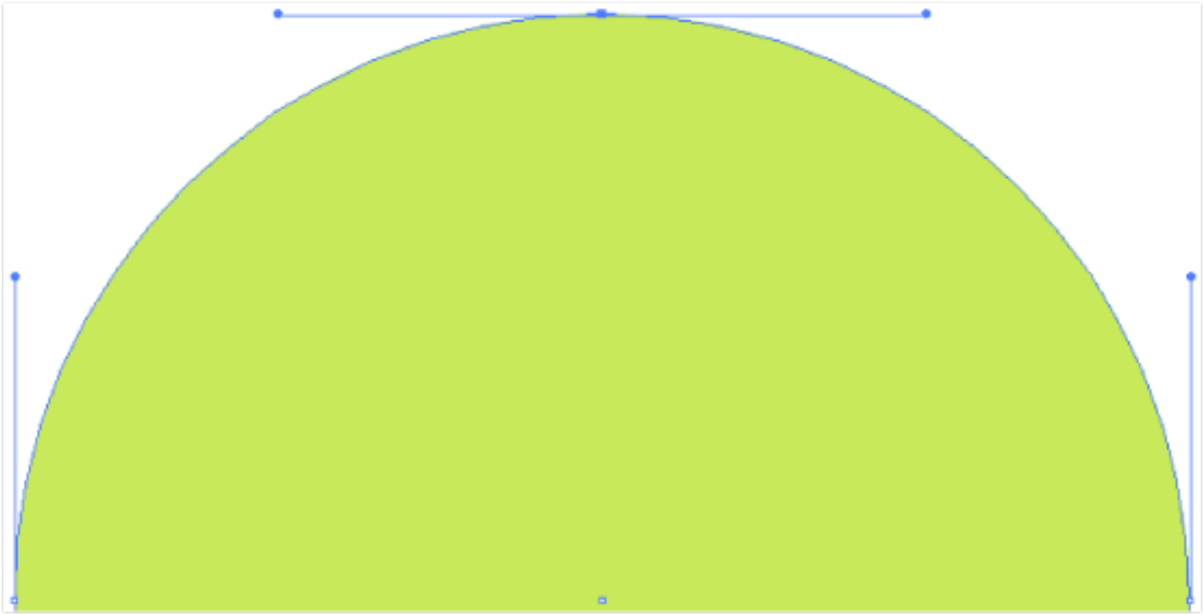
Bitmapped vs. Vector Formats

Bitmapped images are made up of a grid of colored pixels.



PNG, JPEG, GIF, and WebP are bitmapped formats.

Vector images contain paths that are defined mathematically.



SVG is a vector format.

The img Element

```
<img src="" alt="">
```

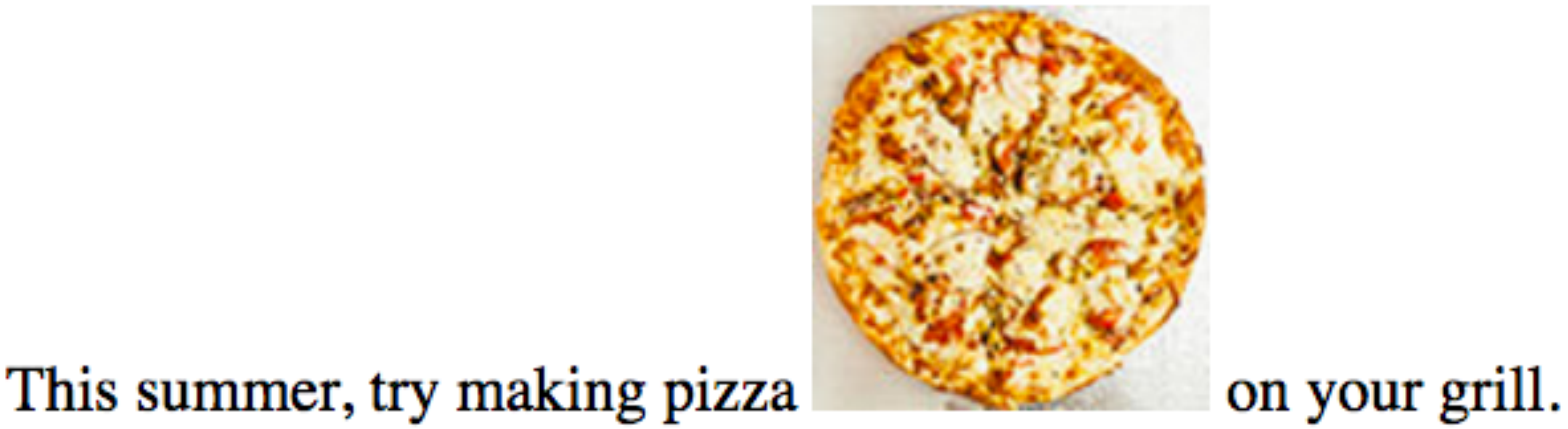
- Embed images on the page with the empty **`img`** element.
- The **`src`** and **`alt`** attributes are required.
- **`img`** can be used for PNG, JPEG, GIF, and SVG.

NOTE: Special markup is recommended for experimenting with cutting-edge image formats like WebP.

The img Element (cont’d)

The **img** element tells the browser to make a server request for the image and display it in its place:

```
<p>This summer, try making pizza <img src="pizza.png" alt="">
 on your grill.</p>
```



This summer, try making pizza on your grill.

The src attribute

```
<img src="/images/icon/next.png" alt="Next">
```

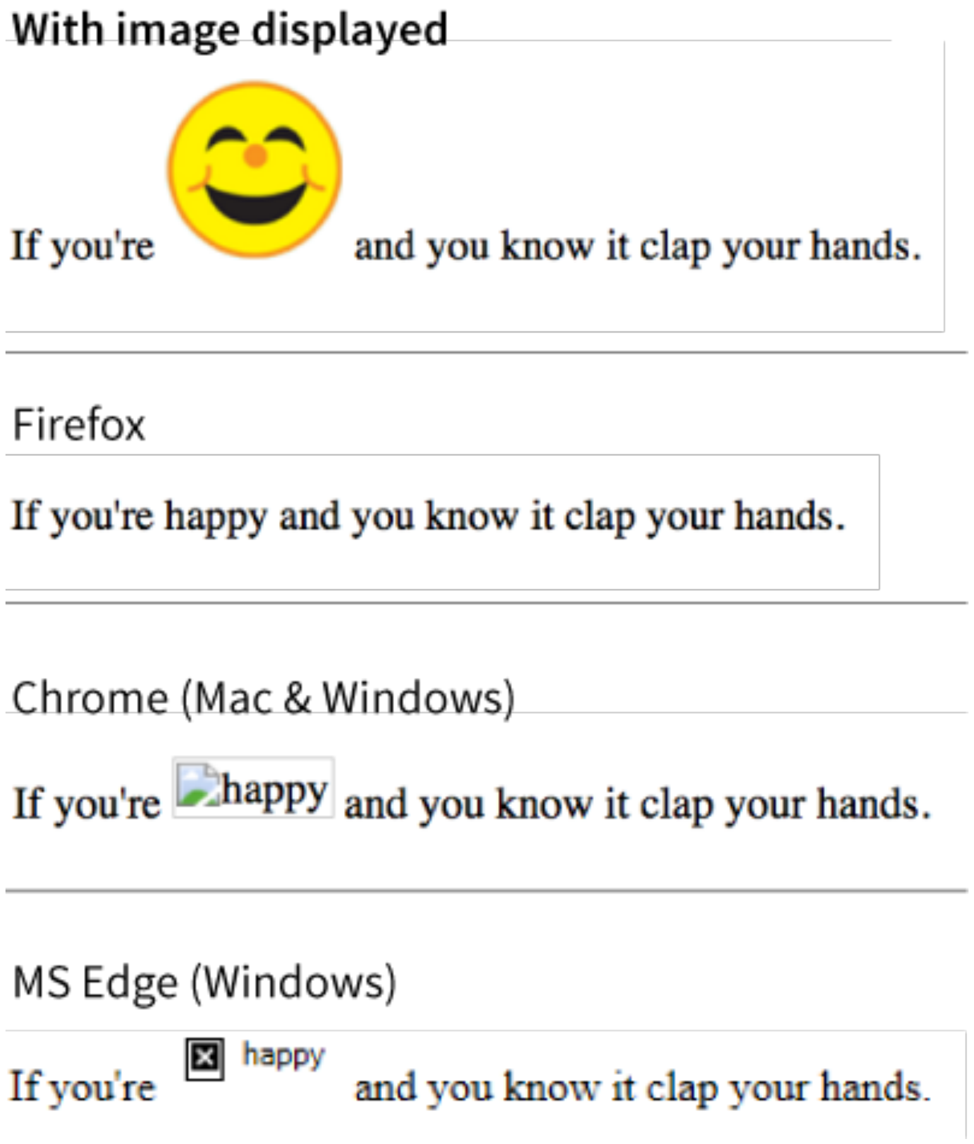
- The **value** is the location (URL) of the image file.
- Use the relative pathname conventions to point to the image on the server.

PERFORMANCE TIP: Take advantage of **caching** (temporary storage). For the same image used repeatedly, using the same pathname reduces the number of calls to the server.

The alt Attribute

```
<p> If you're <img src="/images/smiley.png" alt="happy"> and
you know it, clap your hands.</p>
```

- The **`alt`** attribute provides **alternative text** for those who are not able to see it.
- It is **required** for every **`img`** element in order for the HTML to be valid.
- It is used by screen readers, search engines, and graphical browsers when the image fails to load.



With image displayed

If you're and you know it clap your hands.

Firefox

If you're happy and you know it clap your hands.

Chrome (Mac & Windows)

If you're happy and you know it clap your hands.

MS Edge (Windows)

If you're happy and you know it clap your hands.

Alternative Text Tips

- Alternative text (alt text) should convey the same information and function as the image.
- If the image is purely decorative and shouldn't be read aloud, include the **`alt`** attribute with an empty value:

```
<img src="flowers.svg" alt="">
```

- Consider what the alt text would sound like when read aloud by a screen reader. Is it helpful or a hindrance?
- When an image is used as a link, the alt text serves as the linked text. Write what you'd want the link to say, don't just describe the image.
- Avoid starting alt text with “An image of” or “Graphic of”.

width and height Attributes

```
<img src="flowers.svg" alt="" width="120" height="160">
```

- The **`width`** and **`height`** attributes set the dimensions of the image on the page in number of pixels.
- They help the browser maintain space for the image in the layout while the files load.
- Don't use **`width`** and **`height`** attributes if you are sizing the image with style sheets or if the size changes in a responsive layout.
- If the attribute values do not match the dimensions of the image, the image will resize and may be distorted or blurry.

Adding SVG Images

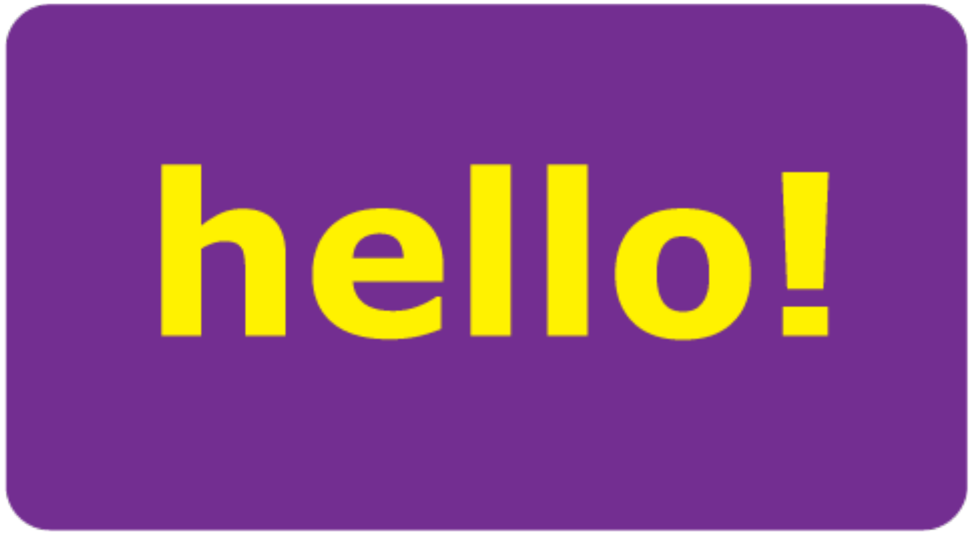
SVG images are unique:

- SVG is a vector format, made up of shapes and paths.
- Those shapes and paths are described in a text file using the **Scalable Vector Graphic** markup language.
- The elements in an SVG can be styled with CSS and scripted for interactivity.
- Because they are vector, SVGs can resize with no loss of quality.

SVG Example

Compare the SVG source to the image. The **svg** element contains a rectangle (**rect** element) and a **text** element:

```
<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 300 180">
  <rect width="300" height="180" fill="purple" rx="20" ry="20"/>
  <text x="40" y="114" fill="yellow" font-family="'Verdana-Bold'"
font-size="72">
    hello!
  </text>
</svg>
```



Adding SVG to a Page

There are several ways to add an SVG image to a web page:

- **`<img>`** element
- **`<object>`** element
- **`<svg>`** element directly in HTML (inline SVG)

Adding SVG with the img Element

You can add an *.svg* file to the page with the **`img`** element:

```
<img src="/images/circle.svg" alt="">
```

PROS:

- Easy and familiar
- Universally supported

CONS:

- Can’t manipulate the SVG with scripts or styles.
- The SVG can’t contain any external resources such as images or fonts.

Embedding SVGs with object

The content of the **object** element is a fallback text or image that displays if the SVG is not supported:

```
<object type="image/svg+xml" data="pizza.svg">
  <img src="pizza.png" alt="pizza">
</object>
```

PROS:

- SVG can be scripted and use eternal files (images and fonts).

CONS:

- You can’t change styles with the same CSS used for the document.
- May be buggy in some browsers.

Inline SVGs with the svg Element

You can paste the content of the SVG text file directly into the HTML source. This is called using the SVG **inline**.

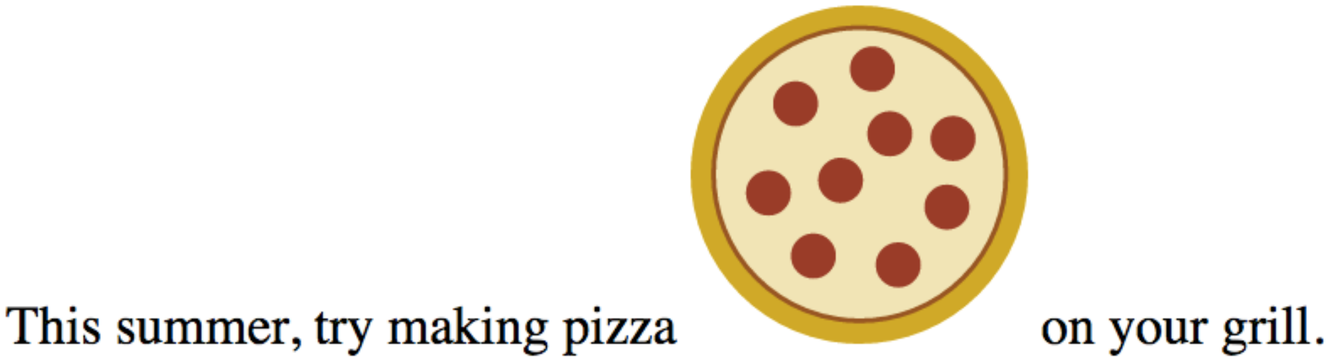
PROS:

- Can take full advantage of scripting and styling the SVG because the elements in the SVG are part of the DOM for the document.

CONS:

- Code can get extremely long and unwieldy.
- Harder to maintain images embedded in the source
- Can't take advantage of caching repeated images
- Not universally supported

Example of an Inline SVG



This summer, try making pizza on your grill.

```
<p>This summer, try making pizza

<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 72 72" width="100"
height="100">
  <circle fill="#D4AB00" cx="36" cy="36" r="36"/>
  <circle opacity=".7" fill="#FFF" stroke="#8A291C" cx="36.1" cy="35.9" r="31.2"/>
  <circle fill="#A52C1B" cx="38.8" cy="13.5" r="4.8"/>
  <circle fill="#A52C1B" cx="22.4" cy="20.9" r="4.8"/>
  <circle fill="#A52C1B" cx="32" cy="37.2" r="4.8"/>
  <circle fill="#A52C1B" cx="16.6" cy="39.9" r="4.8"/>
  <circle fill="#A52C1B" cx="26.2" cy="53.3" r="4.8"/>
  <circle fill="#A52C1B" cx="42.5" cy="27.3" r="4.8"/>
  <circle fill="#A52C1B" cx="44.3" cy="55.2" r="4.8"/>
  <circle fill="#A52C1B" cx="54.7" cy="42.9" r="4.8"/>
  <circle fill="#A52C1B" cx="56" cy="28.3" r="4.8"/>
</svg>
on your grill.</p>
```