

2.4. Managing images in HTML

There are many reasons why you might want to add an image to a web page: you might want to include a logo, photograph, illustration, diagram, or chart.

Images should...

- Be relevant
- Convey information
- Convey the right mood
- Be instantly recognizable
- Fit the color palette

Stock photos

If you do not have photographs to use on your website, there are companies who sell stock images or icons:

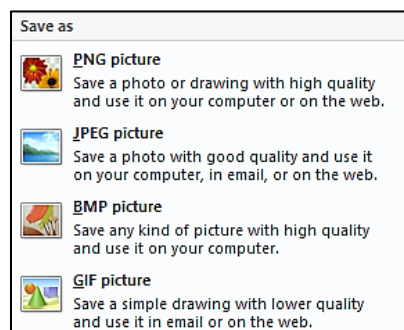
- www.pexels.com
- www.iconfinders.com

What is the best screen size to design for?

It is important to understand the size of the computer screen in order to coordinate the size of the image. Based on the worldwide screen resolution stats (nov 2016 – nov 2017) chart above and the charts below, these are the resolutions you need to be aware of in 2018.

- 360×640 – 21.54%
- 1366×768 – 12.85%
- 1920×1080 – 7.76%
- 375×667 – 4.94%
- 1440×900 – 3.32%
- 1280×800 – 2.67%

Image formats



PNG Portable Network Graphics

JPG or JPEG Joint Photographic Experts Group

BMP BitMaP

GIF Graphics Interchange format

The images on your computer screen are made up of lots of tiny squares known as pixels. The resolution of the screen is the number of pixels represented on it, and on most computers you can increase and decrease this number.

JPEG offers good quality when the image has many different colors.

GIF or PNG images are low quality images which are good for images with few colors or large areas of the same color (flat color). Example of them are logos, illustrations, and diagrams.

Exercise) which format would you save the following images?







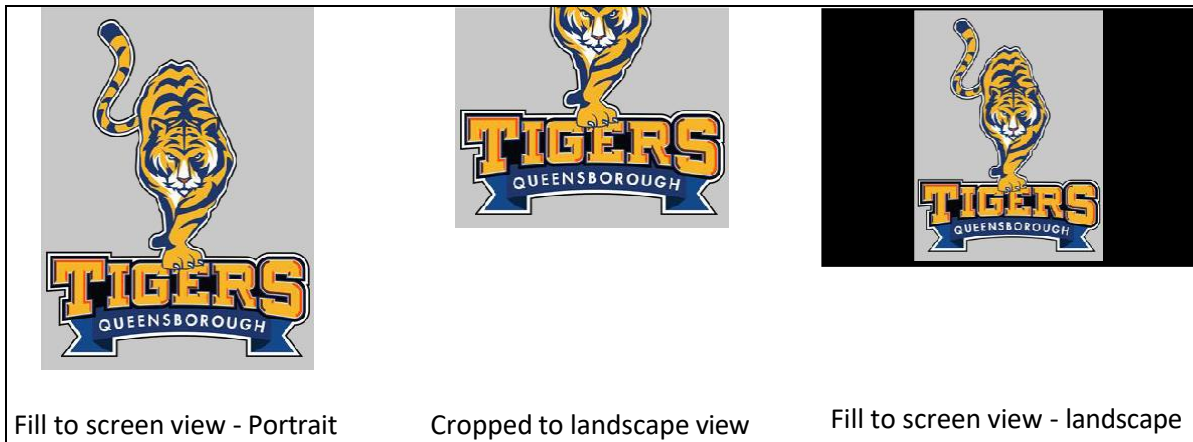


Image dimensions

The images you use on your website should be saved at the same width and height that you want them to appear on the page.

Cropping image

When cropping images it is important not to lose valuable information. It is best to source images that are the correct shape if possible.



SVG - scalable vector graphics

The other image format is SVG - scalable vector graphics.

The `<image>` SVG element includes images inside SVG documents. It can display raster image files or other SVG files. A **raster image** is an image file defined as a grid of pixels. They are also referred to as *bitmaps*. Common raster image formats on the Web are JPEG, PNG, GIF, and ICO.

The only image formats SVG software must support are JPEG, PNG, and other SVG files. Animated GIF behavior is undefined.

Using SVGs is an easy choice once you consider the advantages they offer. For a client, you get superb quality on any device. For us as developers, there are even more reasons to use SVG.

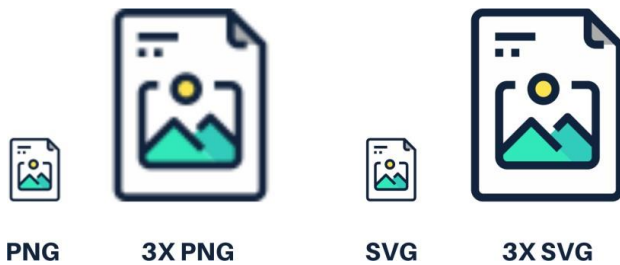
Let's discuss some of the benefits of SVG now.

1. Text-based format

SVG elements contain text, which greatly improves the accessibility of a website. But the main advantage is that this text is indexed by search engines. Therefore, a user can find an SVG file via Google.

2. Scalability

The quality of SVG images does not depend on the resolution. Unlike images of other formats or icon fonts, SVGs look perfectly sharp on any device with any screen size. Scalability also means that if you use the same image throughout the website but in different sizes, you use a single SVG. You do not have to create multiple copies of it as in the case of PNG. Instead, you embed the same image and define the size of it directly in SVG code.



3. High performance

If you prioritize performance, you should use SVG. With SVG, there is no need for an HTTP request to load in an image file. The page loads faster as it has no files to download. Faster loading time translates into better webpage performance and higher search engine ranking. In turn, it improves user experience.

4. Small file size

The size of simple SVG files is defined by the colors, layers, gradients, effects, and masks that it contains. The size of a PNG or any other raster graphics file is defined by the number of pixels that it consists of.

The larger a PNG image is, the heavier it gets in size. This is not the case for SVG icons, though. Also, SVGs can be optimized, and I will tell how later in this article.



5. Numerous editing and animating opportunities

Unlike raster images, vector images can be edited both in special vector drawing programs and directly in a text editor. You can also edit colors or sizes of SVG icons directly via CSS. As for animating SVGs, it can be done with the help of SMIL, Web Animations API, WebGL, or CSS animation. Scroll down to learn more about CSS animation of SVG images.

6. Integration with HTML, XHTML, and CSS

SVG was designed “to integrate with and extend other prominent open Web platform technologies, such as X/HTML, CSS, and Javascript”, according to [W3C](#). So, unlike different image formats, this format can be easily integrated with other documents and technologies.

7. W3C Document Object Model support

There is growing community support for SVG. The World Wide Web Consortium (W3C) has always claimed that the Internet cannot do without vector images. This organization basically created the SVG format, and they actively support it nowadays.

What Are the Inconveniences of SVG?

The large number of small parts makes the use of the SVG format irrational. The more parts an image consists of, the heavier it grows in size.

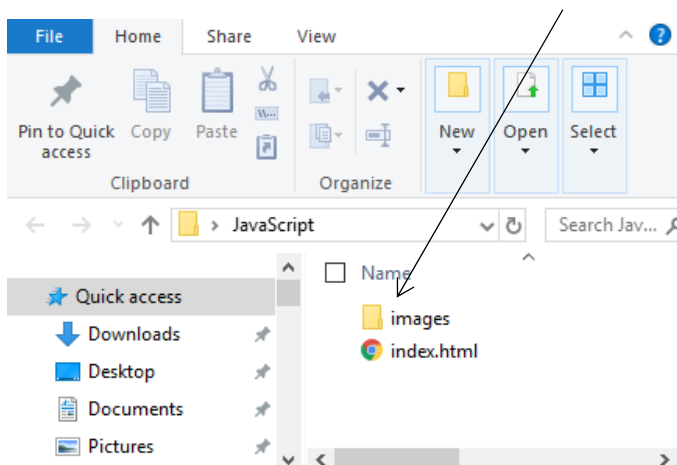
For example, here are two SVG maps of the United States. The second one is slightly more detailed than the first one. But the higher level of detail cost almost a fivefold increase in file size – 33 KB compared to 147 KB. If this map was not monochromatic, the increase would be much greater.



If the picture is linear and contains a few colors – SVG is a solution. However, if the details matter and there are a lot of them, PNG or JPEG may be more suitable. Also note that SVG cannot be used for photographs. If you use a photograph on your website, SVG is not the best option. You definitely should go with a raster image format.

Store Images

As a website grows, keeping images in a separate folder helps you understand how the site is organized. Usually they are stored in sub-folder called “images”.



On a big site you might like to add subfolders inside the images folder. For example, images such as logos and buttons might sit in a folder called interface, product photographs might sit in a page called products, and images related to news might live in a folder called news.

Adding images to a webpage

To add an image into the page you need to use an **** element. This is an empty element (which means there is no closing tag). It must carry the attribute src.

** attributes**

src tells the browser where it can find the image file. This will usually be a relative URL pointing to an image on your own site.

alt provides a text description of the image which describes the image if you cannot see it.

title provides additional information about the image. Most browsers will display the content of this attribute in a tooltip when the user hovers over the image.

height specifies the height of the image in pixels.

width specifies the width of the image in pixels.

Alignment of an image in a webpage

The align attribute was commonly used to indicate how the other parts of a page should flow around an image. It has been removed from HTML5 and new websites should use CSS to control the alignment of images.

The align attribute can take these values:

left aligns the image to the left (allowing text to flow around its right-hand side).

right aligns the image to the right (allowing text to flow around its left-hand side).

top aligns the first line of the surrounding text with the top of the image.

middle aligns the first line of the surrounding text with the middle of the image.

bottom aligns the first line of the surrounding text with the bottom of the image.

```
<h3 align="center">Images and attributes</h3>

```

HTML

Images and attributes



DISPLAY

HTML5: figure and figure caption

HTML5 has introduced a new **<figure>** element to contain images and their caption so that the two are associated.

You can have more than one image inside the **<figure>** element as long as they all share the same caption.

The **<figcaption>** element has been added to HTML5 in order to allow web page authors to add a caption to an image.

```
<h3 align="center">Images using figure and attributes</h3>
<figure>
  
  
  
  <figcaption>This is a caption using tab figcaption <br/><i>QCC Logos </i>
</figcaption>
</figure>
```

HTML

Images using figure and attributes



This is a caption using tab figcaption
QCC Logos