COMP6080
Web Front-End Programming

HTML

Image Types

Images

Images are files that are used to render a collection of pixels on a screen that provide a visual.

There are countless image formats, but we will explore some of the key ones used in web browser.
This is a great article.

JPG   **PNG**   **GIF**   **BMP**   **SVG**

Two Key Categories

Raster Images

Raster image files display an image where every pixel has a defined colour (e.g. RGBA) and position.

When enlarged, the original image is just stretched, leading to a lower quality image.
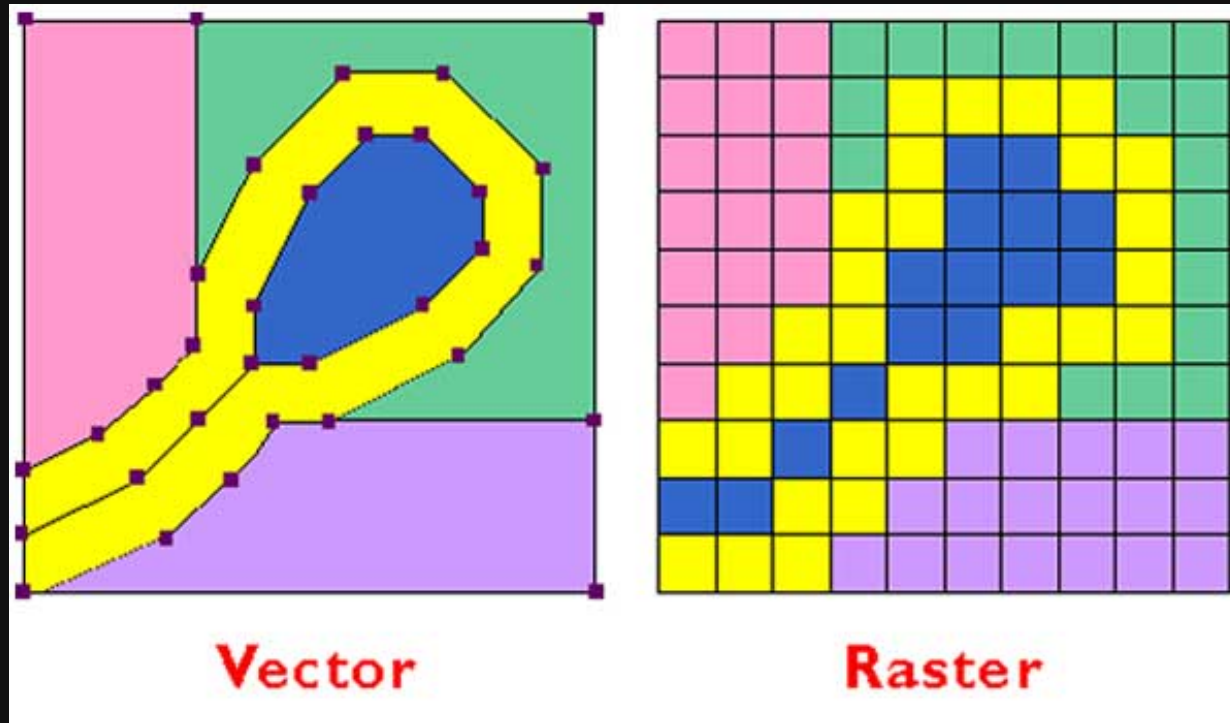
GIF **BMP** **JPG** **PNG**

Vector Images

Vector image files store a series of geometric instructions (lines, shapes, colours) that are rendered on-the-fly by the browser. Vector image files are typically used for icons & animations.

Vector images do not distort when enlarged

SVG

Two Key Categories

Vector   Raster

Source: Psu.edu

Vector Images

Vector images, specifically SVGs, will be discussed in a separate SVG lecture.

Raster Images

Camera taken ↓ photos   *Icon ↓*

	BMP	GIF	JPG	PNG
General Format	Variable	8 bit	24 bit	16-24 bit
Compression	No	Yes, Lossless	Yes, Lossy	Yes, Lossless
Uses	No	Image animations*	High resolution photos	Most non-photo use cases

* Nowadays a .webm is an increasingly common format for animations than GIF

Base64 Encoding

Instead of loading an image as a resource via HTTP, you can instead encode it directly into your page of API response. *Small images (not request sending)*

This reduces the number of HTTP connections required (there is a finite amount that can run in parallel), but does increase the overall amount of data needing to be processed, and will naturally slow down the request being made that contains that information.

Commonly used for SMALL images.