image splitting

the images are divided into two groups:

RASTER

they are composed of a set of colored pixels arranged in a regular grid, where each pixel is defined by a specific color value.
The most common raster file formats are JPEG, PNG, GIF and WebP

VECTOR

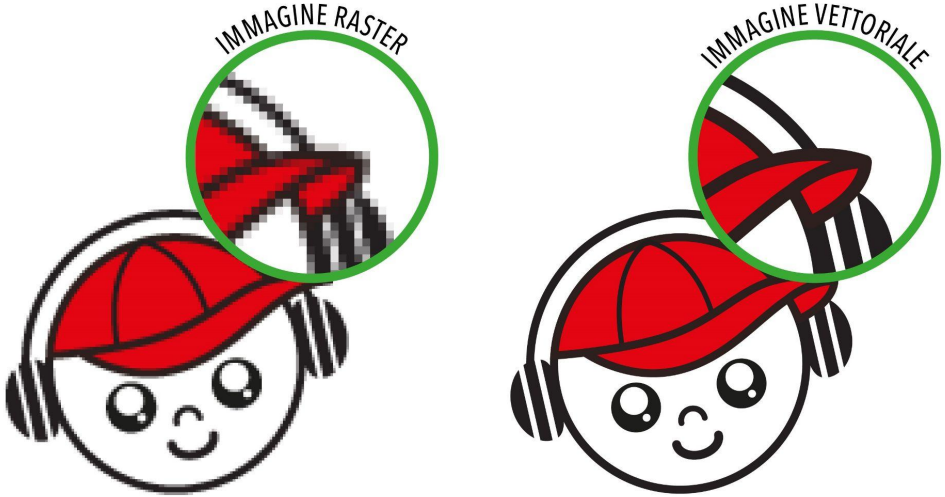
they are made up of geometric elements such as lines, curves and shapes, and are defined by a series of mathematical instructions that describe how the elements must be arranged and how they must be colored

The most common vector file format is SVG.

differences between vector and raster

When a raster image is enlarged, the pixel size increases and the image quality decreases.

while vectors, since they are not made up of pixels, can be scaled to any size without loss of quality.



JPEG

JPEG is a raster image format.
Main characteristics: supports millions of colors, uses lossy compression, and is best for photographs.
Pros: small file size, widely supported, and works well for photographic images.
Cons: quality degradation with each save, not ideal for images with sharp edges, and not suitable for images with transparency.
Best use cases: photographic images that require small file sizes, such as website backgrounds, product images, and social media posts.

PNG

PNG is a raster image format.
Main characteristics: supports transparency, lossless compression, and can have a small file size.
Pros: supports transparency, works well for images with sharp edges, and is great for logos and icons.
Cons: larger file size than JPEG, not ideal for photographs, and not supported by older browsers.
Best use cases: images with transparency, logos, and icons.

GIF

GIF is a raster image format.
Main characteristics: supports animation and transparency, and uses lossless compression.
Pros: supports animation, small file size, and works well for small, simple images.
Cons: limited color range, not ideal for photographic images, and not suitable for large images.
Best use cases: simple animations, logos, icons, and images with transparency.

WebP

WebP is a raster image format.
Main characteristics: uses both lossy and lossless compression, and supports transparency.
Pros: small file size, great for photographic images, and supports transparency.
Cons: not widely supported by all browsers, and not suitable for large images.
Best use cases: photographic images, images with transparency, and website backgrounds.

SVG

SVG is a vector image format.
Main characteristics: scalable, uses mathematical equations to create images, and is resolution independent.
Pros: scalable to any size without loss of quality, small file size, and great for logos and icons.
Cons: not suitable for complex images, and not widely supported by older browsers.
Best use cases: logos, icons, and simple illustrations.

Conclusion

The choice between vector and raster format depends on the intended use of the image. Vector images are better for illustrations, logos and graphics, as they can be resized without loss of quality. Raster images, on the other hand, are better for photographs and complex images, as they capture more detail and color nuances.