

Images on the Web

HTML course: Lesson 5

Lesson Plan

1

Different image formats

2

Methods of inserting images into a website

3

Working with decorative properties

4

Optimization

Formats

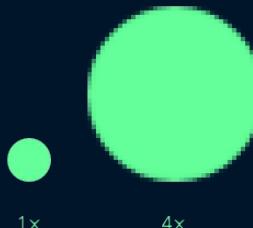


Image Formats

Raster Images

- Consist of pixels
- Have a fixed resolution

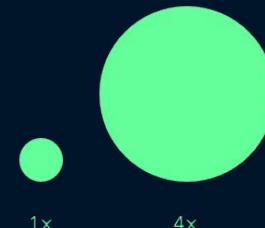
- JPEG
- PNG
- GIF
- WEBP
- AVIF



Vector Images:

- Created using geometric **shapes**, such as **lines and curves**

- SVG



VS

Raster	Vector
Consist of pixels	Consist of mathematical formulas, shapes, and lines
Large file size	Very small file size
Scales with quality loss	Looks the same at any size
Can only be converted to other raster formats	Can be converted to raster images
Cannot be modified easily	Can be easily modified (e.g., splitting into components, animating)
Ideal for photographs	Ideal for icons



Methods of Inserting

Raster Images

- HTML

- img
 - src
 - alt
 - width
 - height
- picture
- figure
- figcaption



```
<figure class="wiggly wiggly2">

<figcaption>Wassily Kandinsky: Park of St Cloud,
1906</figcaption>
</figure>
```



Wassily Kandinsky: Park of St Cloud, 1906

- CSS

- background-image

```
#app #app--background #app--background-image { vYpXNJd?view
background-image: url(
https://images.unsplash.com/photo-14837286423...);
height: 100%;
transition: > filter 250ms, transform 250ms;
width: 100%; }

.background-image { vYpXNJd?vie
background-position: > center;
background-repeat: > no-repeat;
background-size: cover;
```

Insertion





```

```

Naming:

- Use only English words
- No spaces
- No capital letters
- Reflect the location or subject of the image

blue triangle.jpg

BigPicture.jpg

Attributes:

- **width/height:** Specifies width/height of the image
- Used for displaying images before styles load, in reading mode, and for accessibility

cute-kitten.jpg
feature-block-1.jpg

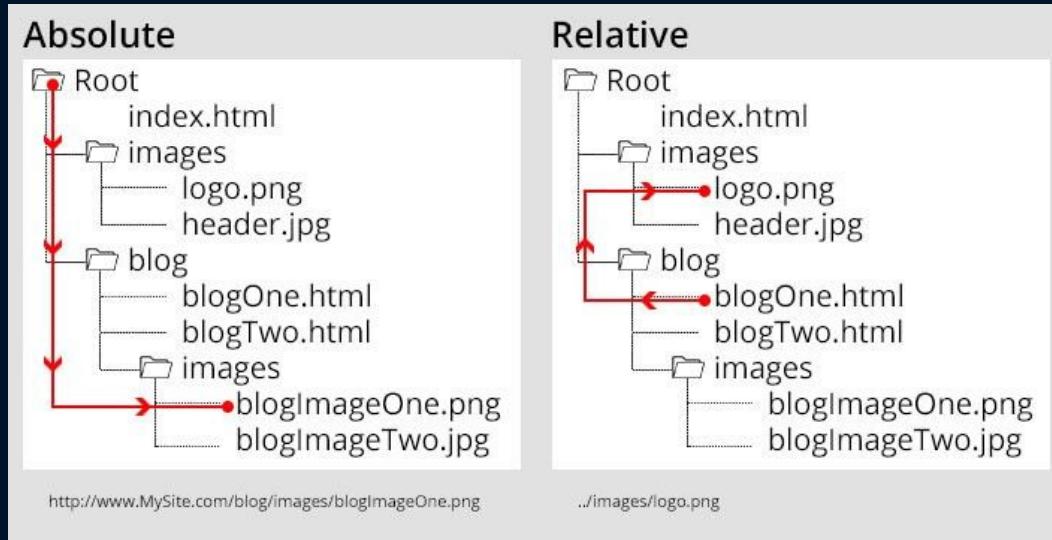
Paths

- **Absolute**

- starts with slash
- applicable to server

- **Relative**

- starts with filename or dot and slash ./ or two dots and slash ../
- applicable to file system



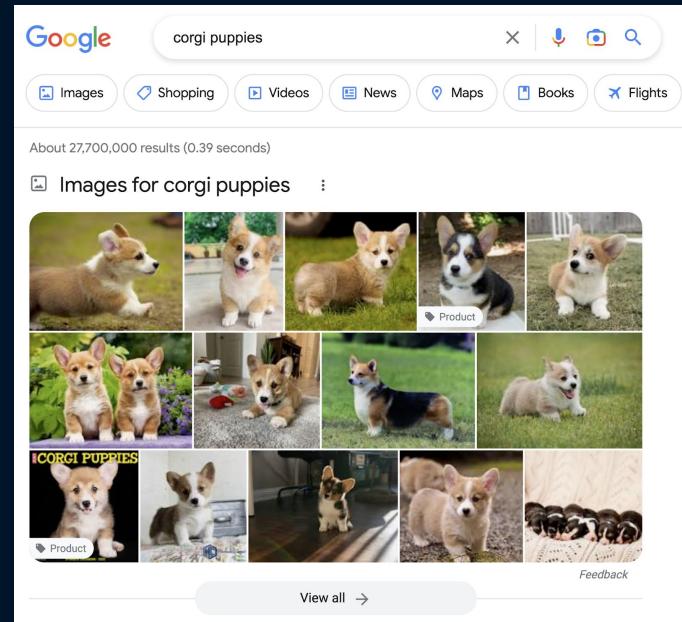
Importance of the `alt` Attribute

```

```

- Screen readers
- Search engines
- Broken images

Digital image that loaded correctly	Digital image that did not load correctly and does not have alt text	Digital image that did not load correctly and does have alt text
		



When alt is not needed

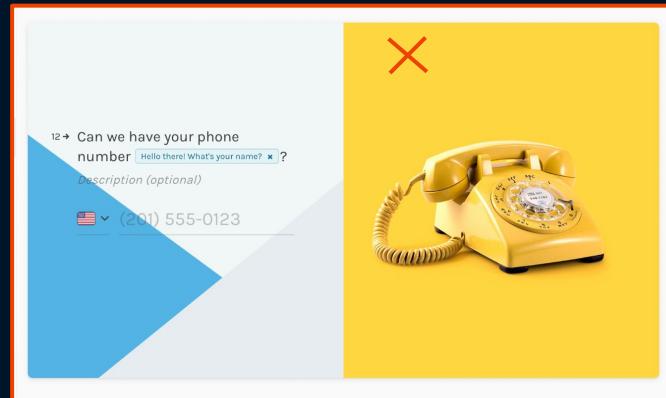
```

```

- Decorative and stock images
- Icons
- When the image caption matches the alt text



A screenshot of the Jimdo website builder interface. It shows a page with three service categories: "BIRTHDAYS" (represented by balloons), "WEDDINGS" (represented by two glasses toasting), and "MUSIC" (represented by musical notes). Each category has a small descriptive text below it. The "MUSIC" icon has a red 'X' mark above it. The Jimdo toolbar is visible at the top.





- Man wearing a helmet riding a bicycle
- bicycle
- Image of someone riding a bicycle



- Lay's Classic Potato Chips, 1.5 Ounce
- Potato Chips
- buy potato chips online

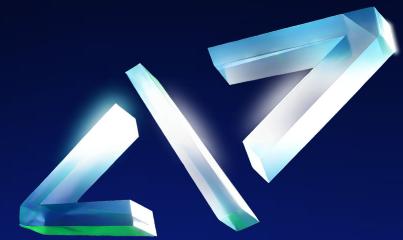


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- download now free
- register to get free course

Good alt Practices

- Summarize what's in the image
- Describe as accurately as possible
- Avoid declaration like "image", "photo", "picture"
- Use the context of the surrounding content
- Avoid repeating text that is in the content
- Don't use very long descriptions, use other attributes for detailed descriptions
- Write in the site's language

Vector



Vector

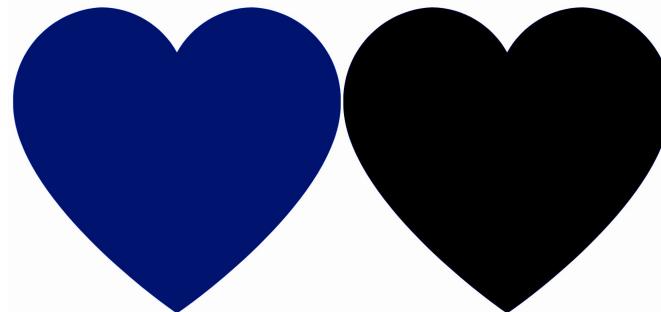
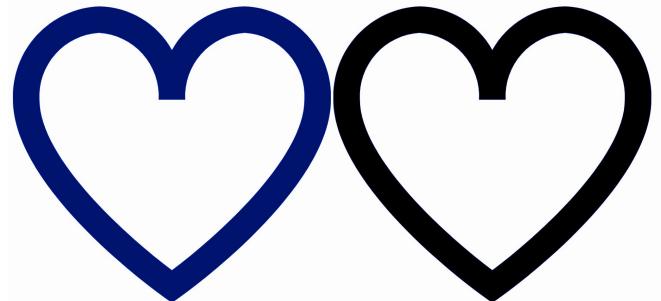
images

Scalable Vector Graphics



A markup language extended from XML
for describing two-dimensional vector
graphics

SVG files can be created and edited with
any text editor and drawing programs



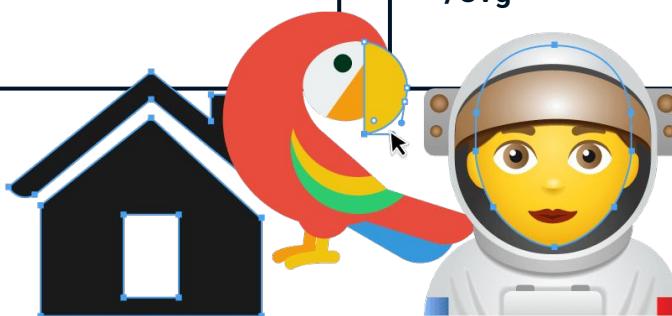
Inserting

Vector Images

```
<object data="image.svg"  
type="image/svg+xml"></object>  
<iframe src="image.svg"></iframe>  
<embed type="image/svg+xml" src="image.svg"/>  
  
.block {  
    background-image: url(image.svg);  
    list-style-image: url(image.svg);  
    content: url(image.svg);  
}  

```

```
<svg width="300" height="200"  
xmlns="http://www.w3.org/2000/svg">  
    <rect width="100%" height="100%"  
fill="red" />  
</svg>  
  
<svg viewBox="0 0 30 10"  
xmlns="http://www.w3.org/2000/svg">  
    <use xlink:href="image.svg"/>  
</svg>
```



Choosing format



Choosing an Image Format

- **Based on Image Type**
 - Photo – **jpg, webp, avif**
 - Icon – **png, svg, webp**
 - Graphics – **svg**
- **Based on Resolution**
 - Detailed – **avif, webp, svg**
 - Less detailed – **jpg, png**
- **Browser Support**
 - Modern – **webp, avif**
 - Older – **jpg, png, gif**
- **Color Depth**
 - Multi-color – **webp, avif, jpg**
 - Few colors – **png, svg**
- **Transparency**
 - Yes – **png, webp, gif, svg, avif**
 - No – **jpg, webp, avif**

Export from Figma



Fill oo +

Image 100 %

Stroke +

Effects +

Export +

1x ... JPG ...

Export image 8

▼ Preview

A screenshot of the Figma export interface. It shows a preview of the blood pressure monitor image. Three annotations point to specific elements: a red arrow points to the "JPG" dropdown labeled "image format"; a green arrow points to the "Export image 8" button labeled "Export button"; and a blue arrow points to the preview image itself labeled "image preview".

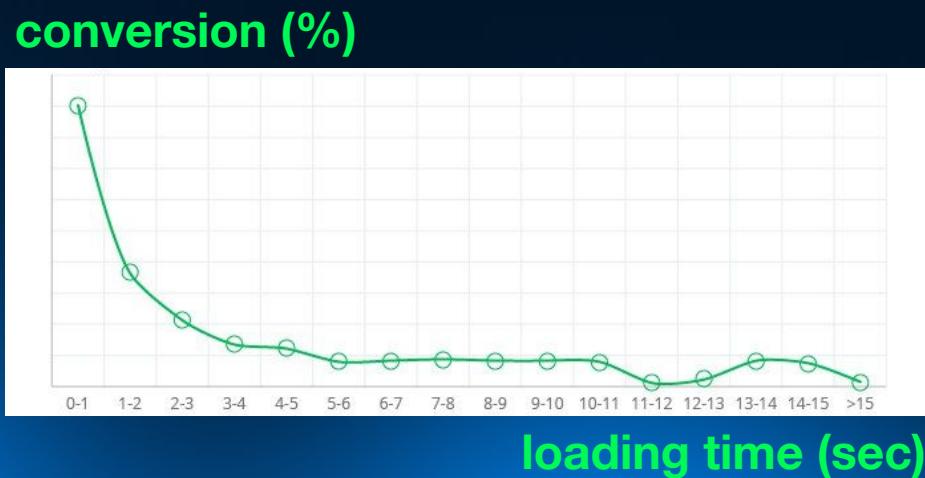
Break time



Optimize



Why Optimize Images

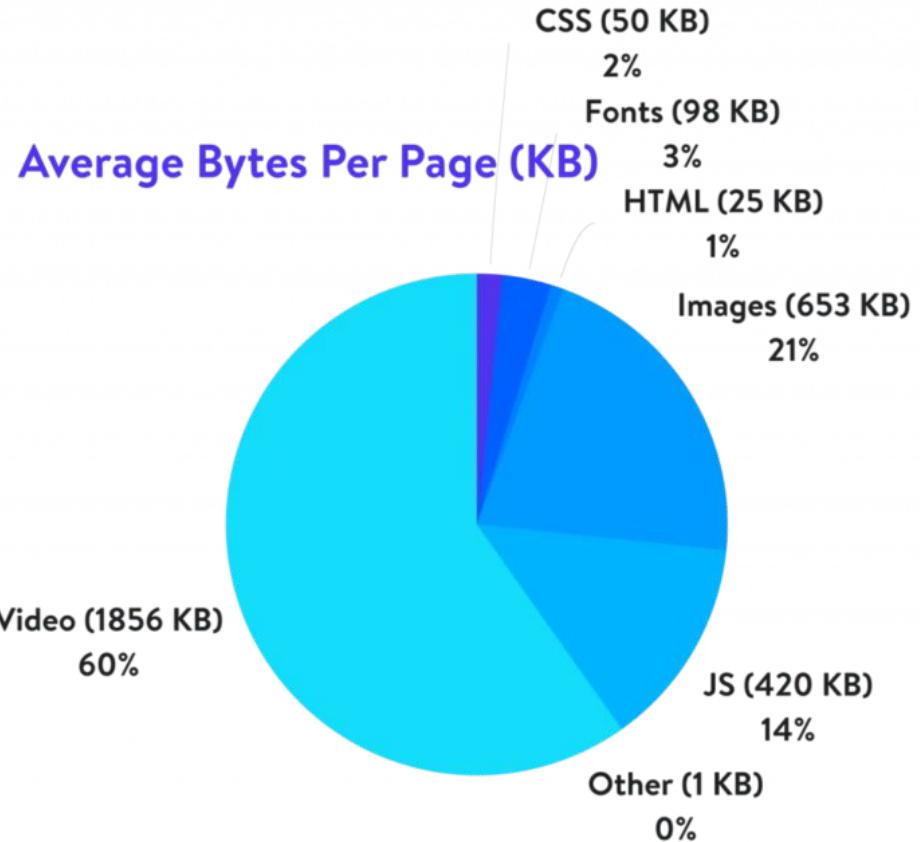


- Improves website loading speed
- Saves traffic and server resources
- Enhances website ranking in search results
- Increases conversion rates

Optimization

Methods

- Compress File Size
- Crop to Exact Size
- Change Format
- Use CSS Styling
Instead of Image Merging
- Decomposition
- Using patterns

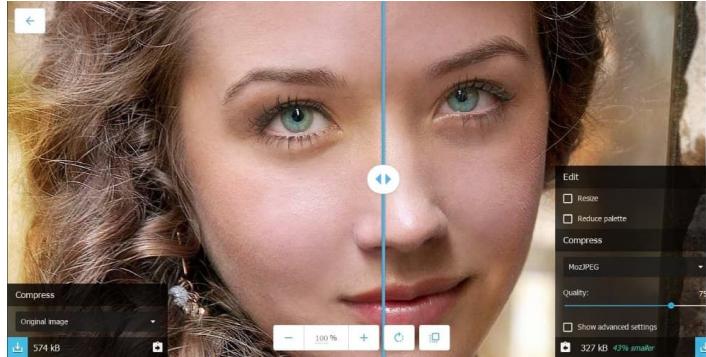


Optimization methods

Reduce File Size

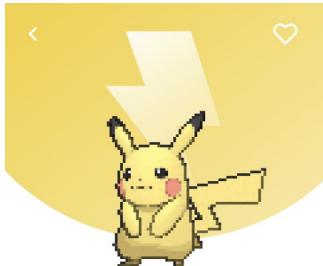
For example

- [squoosh.app](#)
- [SVGOMG](#)



Optimization methods

Decomposition



Optimization methods

Crop to exact size

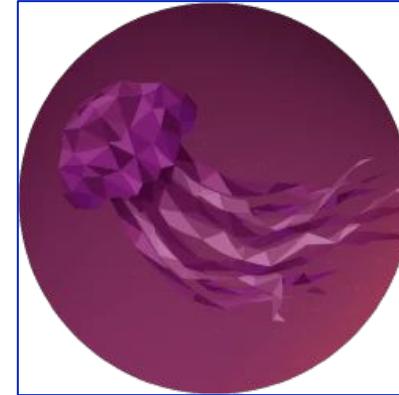
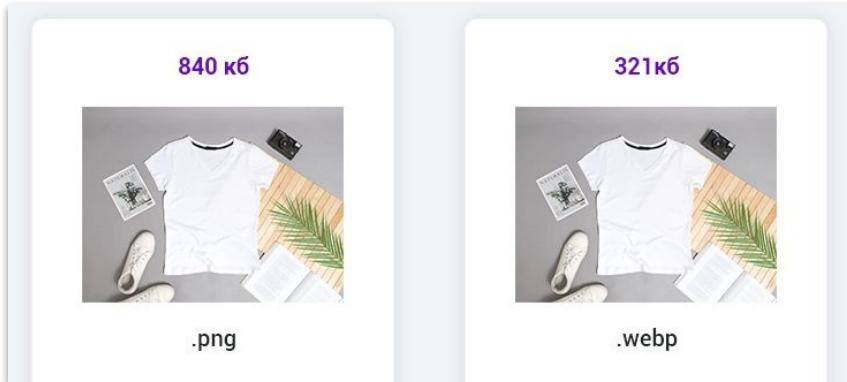
No empty areas or unnecessary transparency



Optimization methods

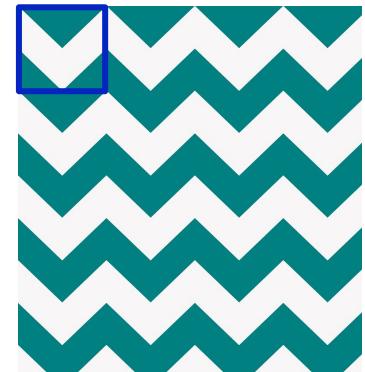
Change format

- Choose a more modern format
- Convert raster to vector
- Remove unnecessary transparency



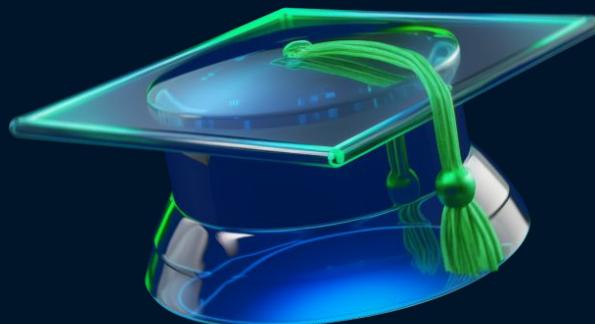
Optimization Methods

- Use CSS Styling Instead of Image Merging:
 - Borders
 - Gradients
 - Filters
 - Transformations (mirror, rotate, tilt)
- Using patterns



Summary

1. Difference between **image formats**
2. Difference between **raster** and **vector**
3. Choosing the right **image format**
4. Selecting the **insertion method** for images
5. How and why to **optimize images**



Quality Criteria for HTML Course

-  Mandatory for passing the course
-  Required for the highest grade
-  Optional

-  1.6. Favicon icons display correctly.
-  2.9. Elements with background images should have a matching background color.
-  3.1. Correct Image Format
-  3.2. Extract images without style filters from the design.
-  3.3. Image Insertion
-  3.4. Specify dimensions for all images
-  3.5 Provide alt text for all images.
-  3.6. Optimize images for browser rendering.
-  3.7 Use vector sprites where applicable.

Homework

1. Export all images from the Figma template in suitable formats: `webp`, `svg`
2. Insert images into your markup, using the appropriate method of insertion: `img`, `background-image` or `svg`.
3. Add `alt` text in `` tags.
4. Add basic sizes: `width` and `height`, in `` tags.
5. Add `background-color` property for selectors with `background-image`.





QUESTIONS?



Please fill out the feedback form
It's very important for us



THANK YOU!
Have a good evening!