

HTML

HTML FUNDAMENTALS

Images



IN A ROCKET

Learn front-end development at *rocket speed*

LET'S LEARN HTML!

IN THIS MODULE YOU'LL LEARN:

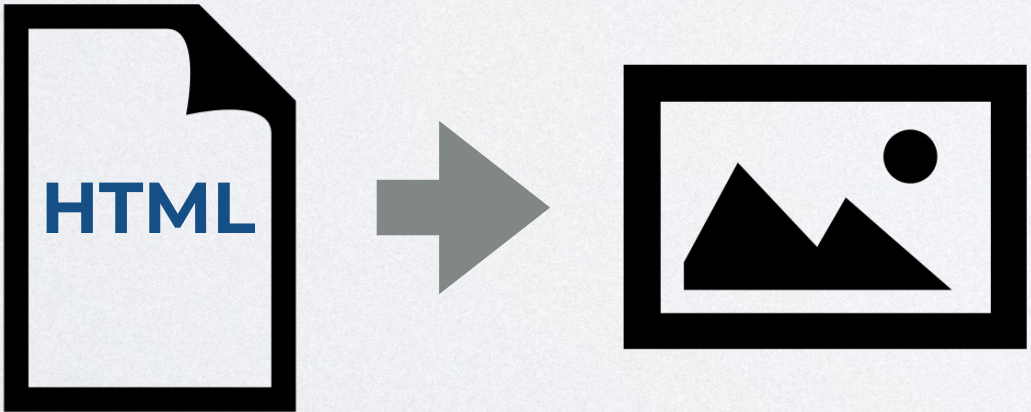
- ☐ When you should load your images **via HTML or CSS**.
- ☐ How to **insert an image** in your HTML code.
- ☐ What's the **difference between bitmap and vector** images.
- ☐ Which are the **best web formats** for bitmap and vector images.
- ☐ What's the **difference between GIF, JPG, PNG, and SVG**.
- ☐ How to **optimize an image** for the web.
- ☐ How to use an **image placeholder**.

CONTENT OR DECORATION

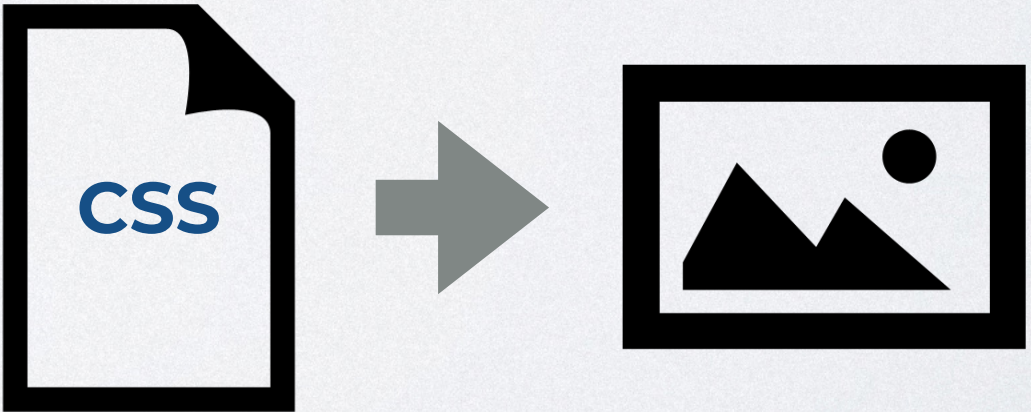
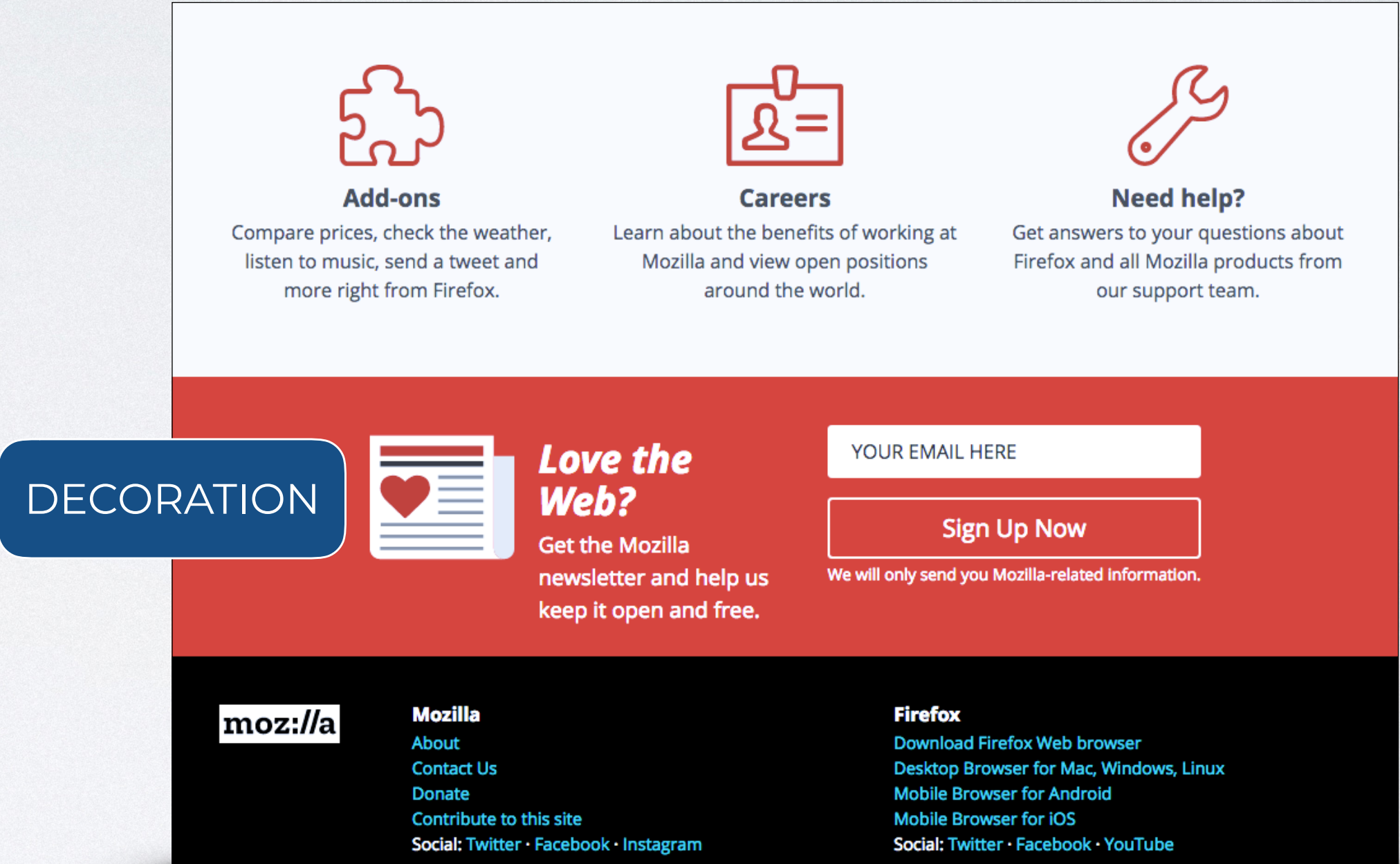
When to load an image via HTML or CSS

CONTENT OR DECORATION

If an image is **content**
you should load it via **HTML**.



If an image is just **decoration**
you should load it via **CSS**.



CONGRATULATIONS!

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IMAGES VIA HTML

How to load images by using the img HTML element

Tim Berners-Lee

From Wikipedia, the free encyclopedia

Sir Timothy John "Tim" Berners-Lee, OM, KBE, FRS, FREng, FRSA, DFBCS (born 8 June 1955), also known as "**TimBL**", is a British [computer scientist](#), best known as the inventor of the [World Wide Web](#). He made a proposal for an information management system in March 1989,^[4] and he implemented the first successful communication between a [Hypertext Transfer Protocol](#) (HTTP) client and server via the Internet sometime around mid November of that same year.^{[5][6][7][8][9]}

Berners-Lee is the director of the [World Wide Web Consortium](#) (W3C), which oversees the Web's continued development. He is also the founder of the [World Wide Web Foundation](#), and is a senior researcher and holder of the [Founders Chair](#) at the [MIT Computer Science and Artificial Intelligence Laboratory](#) (CSAIL).^[10] He is a director of the [Web Science Research Initiative](#) (WSRI),^[11] and a member of the advisory board of the [MIT Center for Collective Intelligence](#).^{[12][13]}


In 2004, Berners-Lee was [knighted](#) by Queen [Elizabeth II](#) for his pioneering work.^[14] In April 2009, he was elected a foreign associate of the [United States National Academy of Sciences](#).^{[15][16]} He was honoured as the "Inventor of the World Wide Web" during the [2012 Summer Olympics opening ceremony](#), in which he appeared in person, working with a vintage [NeXT Computer](#) at the [London Olympic Stadium](#).^[17] He [tweeted](#) "This is for everyone",^[18] which instantly was spelled out in [LCD](#) lights attached to the chairs of the 80,000 people in the audience.^[17]

Contents [\[show\]](#)

Early life

Berners-Lee was born in southwest London, England, on 8 June 1955,^[19] one of four children born to [Mary Lee Woods](#) and [Conway Berners-Lee](#). His parents worked on the first commercially-built computer, the [Ferranti Mark 1](#). He attended Sheen Mount Primary School, and then went on to attend south west London's independent [Emanuel School](#) from 1969 to 1973.^{[1][14]} A keen [trainspotter](#) as a child, he learnt about electronics from tinkering with a model railway.^[20] He studied at [The Queen's College](#) of the [University of Oxford](#) from 1973 to 1976, where he received a [first-class degree](#) in physics.^[19]

Sir Tim Berners-Lee



Berners-Lee in 2012

Born	Timothy John Berners-Lee <div>8 June 1955 (age 59)^[1]</div> <div>London, England</div> <div>United Kingdom</div>
Residence	United Kingdom and United States ^[2]
Nationality	British
Alma mater	The Queen's College, Oxford
Occupation	Computer scientist
Employer	World Wide Web Consortium University of Southampton Plessey

Element

``

Tag Attribute Value Attribute Value

.....
The img tag is empty and does not have a closing tag.

Element

```

```

The image URL.
This attribute is mandatory for img.

SOURCE: [Mozilla Developer Network](#).

Element

```

```

Defines the alternative text describing the image.
Users will see this text displayed:

- if the image URL is wrong,
- if the image is not yet downloaded or
- the image is not in one of the supported formats.

SOURCE: [Mozilla Developer Network](#).

IMAGES VIA HTML

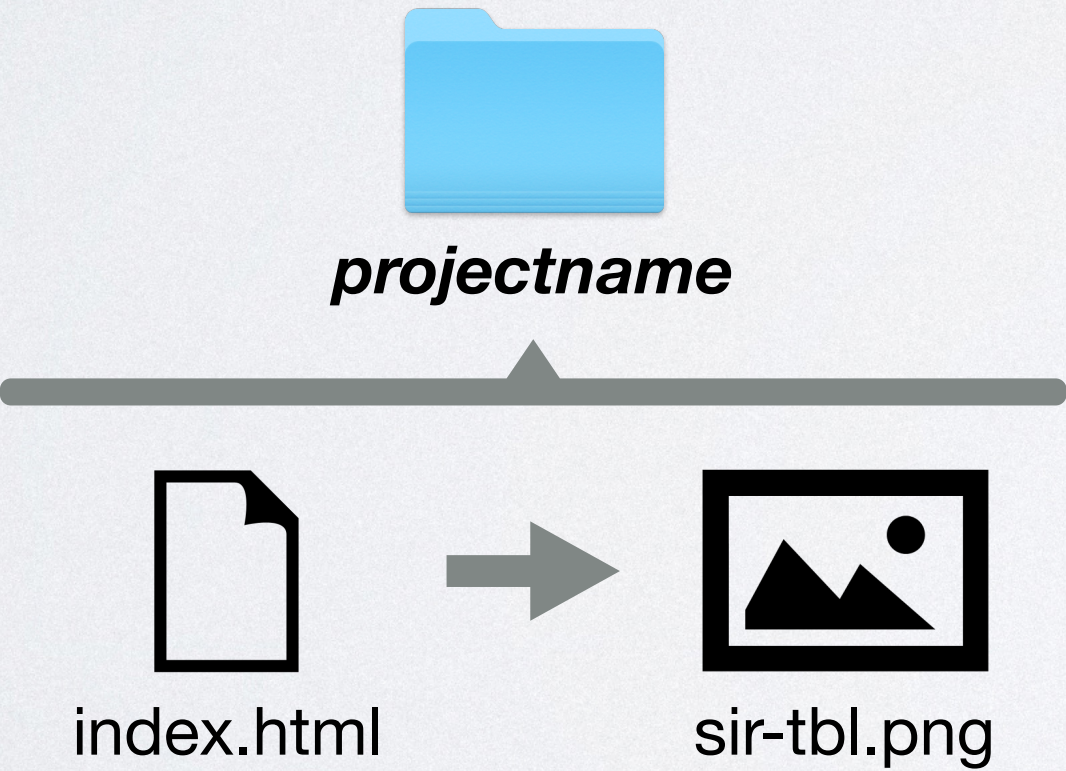
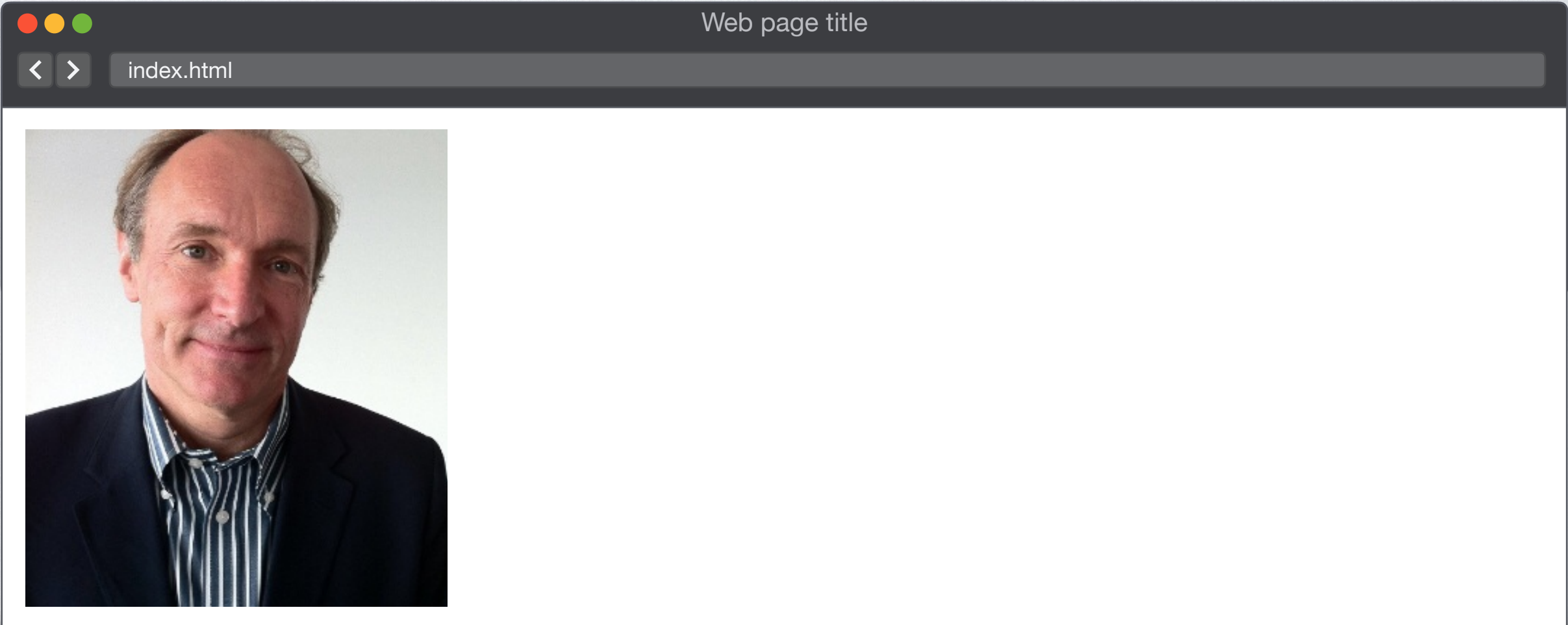
Editor

READY TO USE CODE

Browser

```
<body>

</body>
```



CONGRATULATIONS!

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FIGURE

How to use it to load images with optional caption

FIGURE

Editor

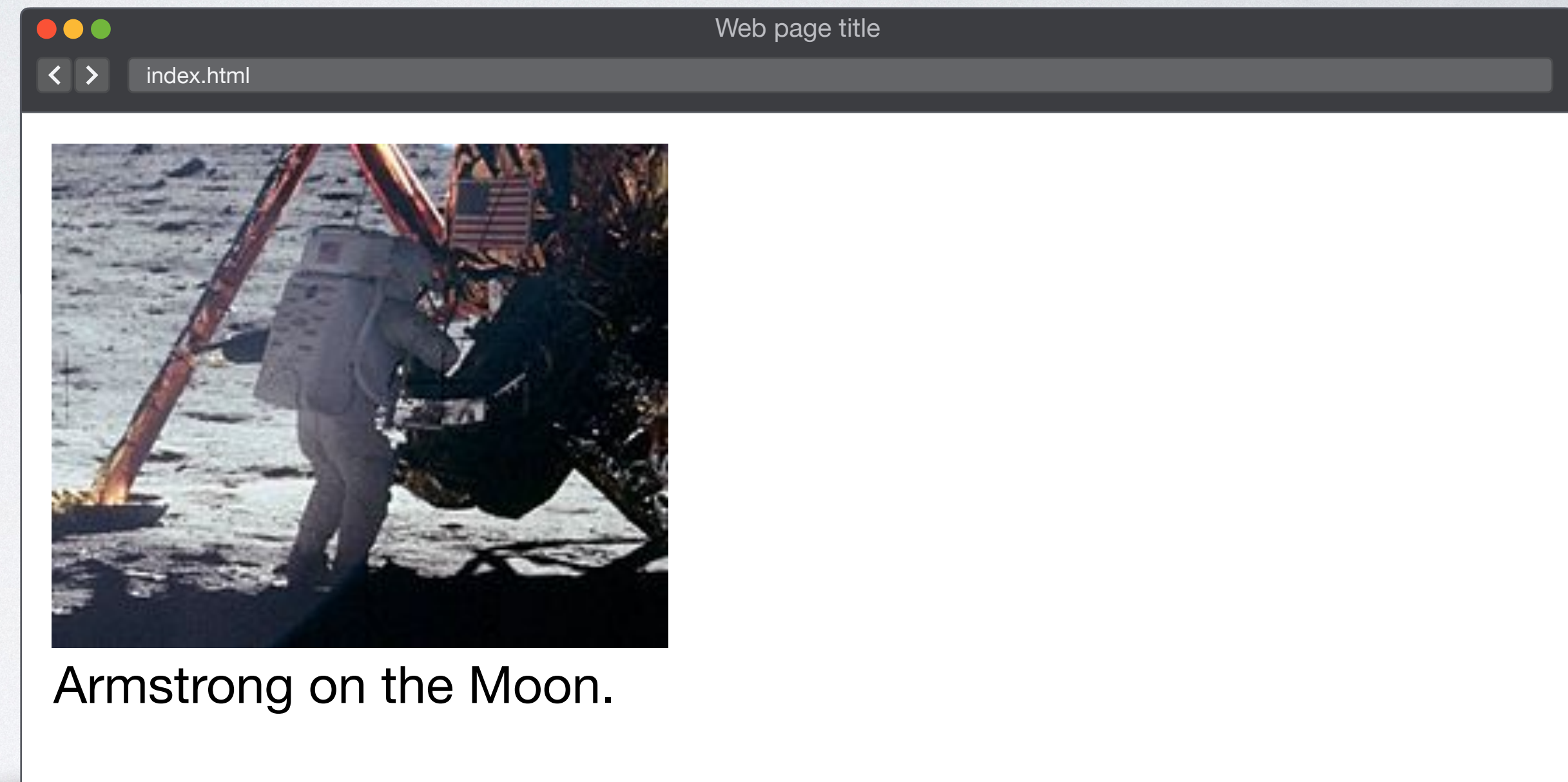
READY TO USE CODE

```
<body>
<figure>
  
  <figcaption>Armstrong on the Moon.
  </figcaption>
</figure>
</body>
```

The **figure** element represents some flow content, optionally with a caption, that is self-contained and is typically referenced as a single unit from the main flow of the document.

SOURCE: [Mozilla Developer Network](#).

Browser

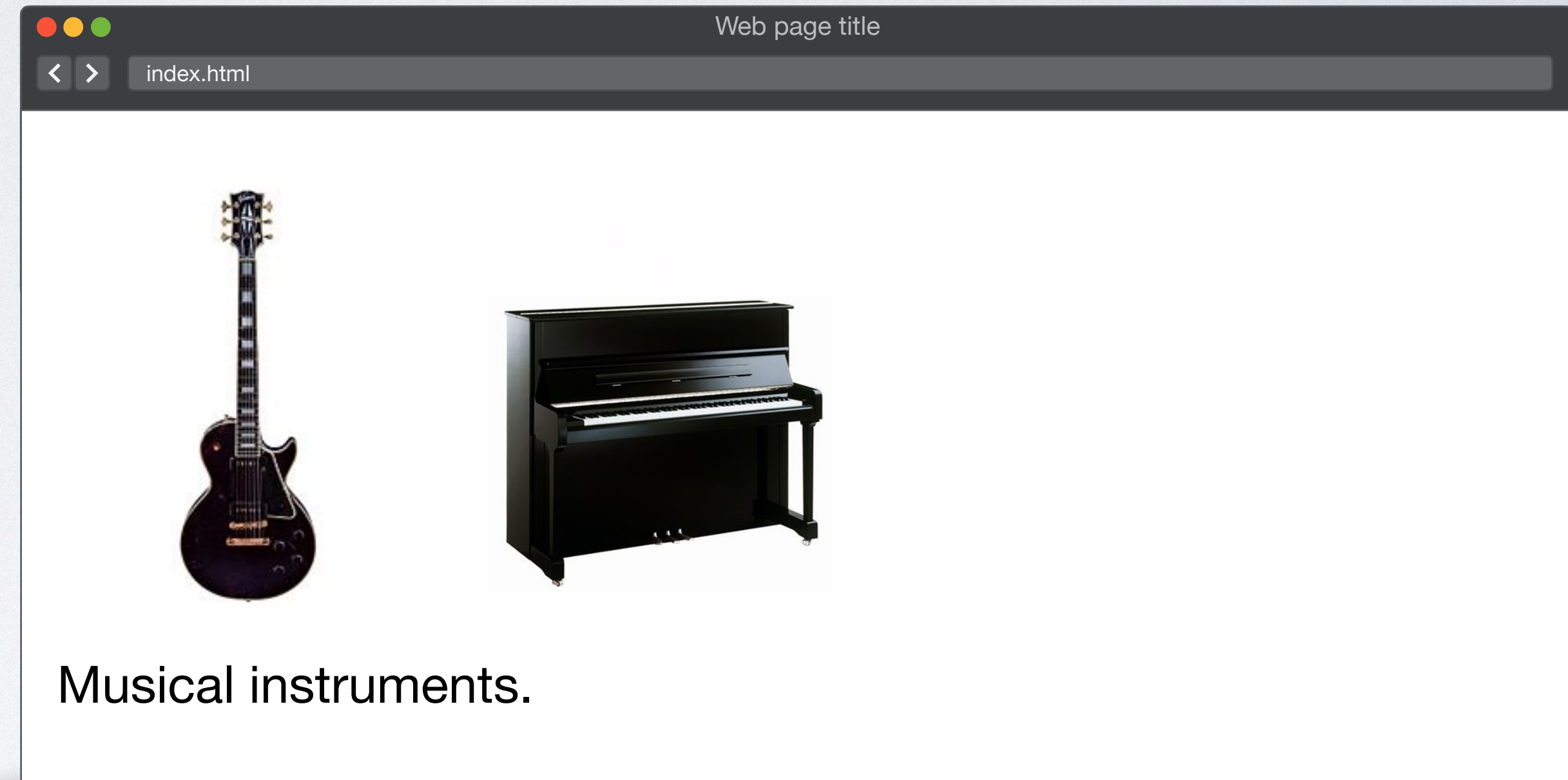


FIGURE

Editor

```
<body>  
<figure>  
    
    
  <figcaption>Musical instruments.  
  </figcaption>  
</figure>  
</body>
```

Browser



PICTURE

How to load from multiple sources for responsive designs

PICTURE

Editor

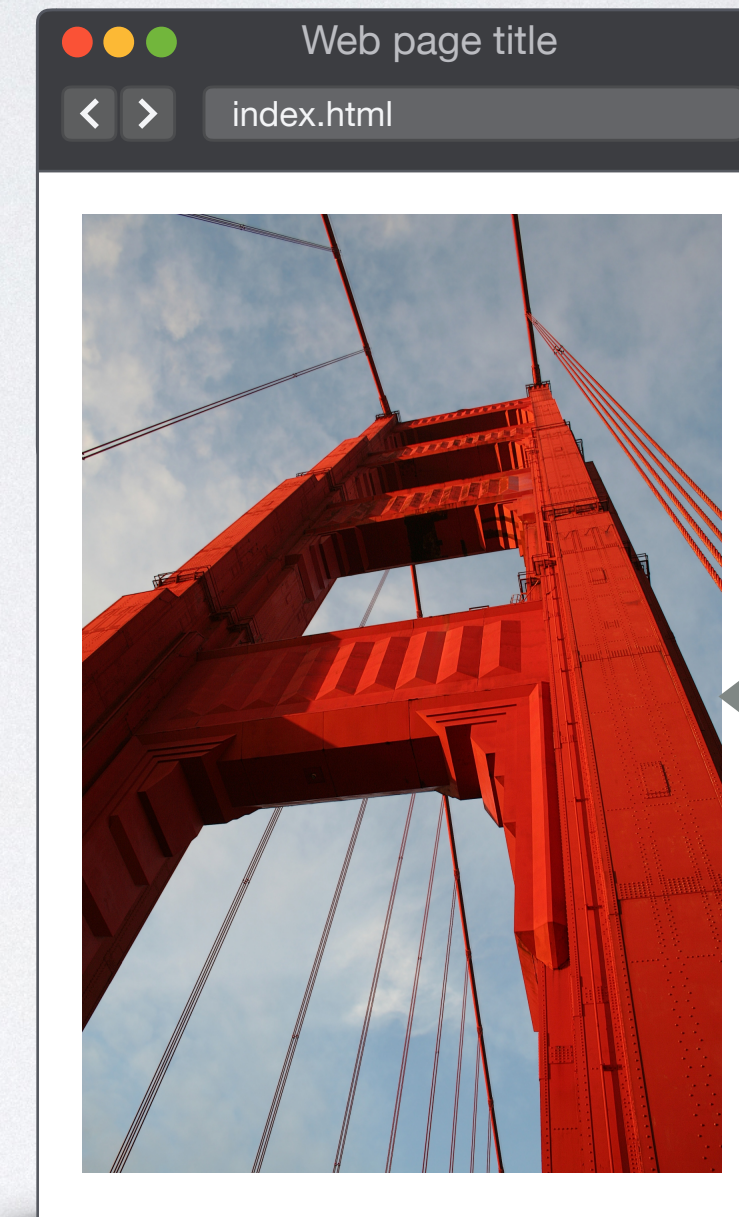
READY TO USE CODE

```
<body>
<picture>
  <source media="(max-width: 465px)"
  srcset="narrow.jpg">
  <source media="(min-width: 466px)"
  srcset="wide.jpg">
  
</picture>
</body>
```

The **picture** element is a container used to specify multiple `<source>` elements for a specific `` contained in it. The browser will choose the most suitable source according to the current layout and the device it will be displayed on.

SOURCE: [Mozilla Developer Network](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/picture).

Browser



The browser loads narrow.jpg

← Up to 465px →

PICTURE

Editor

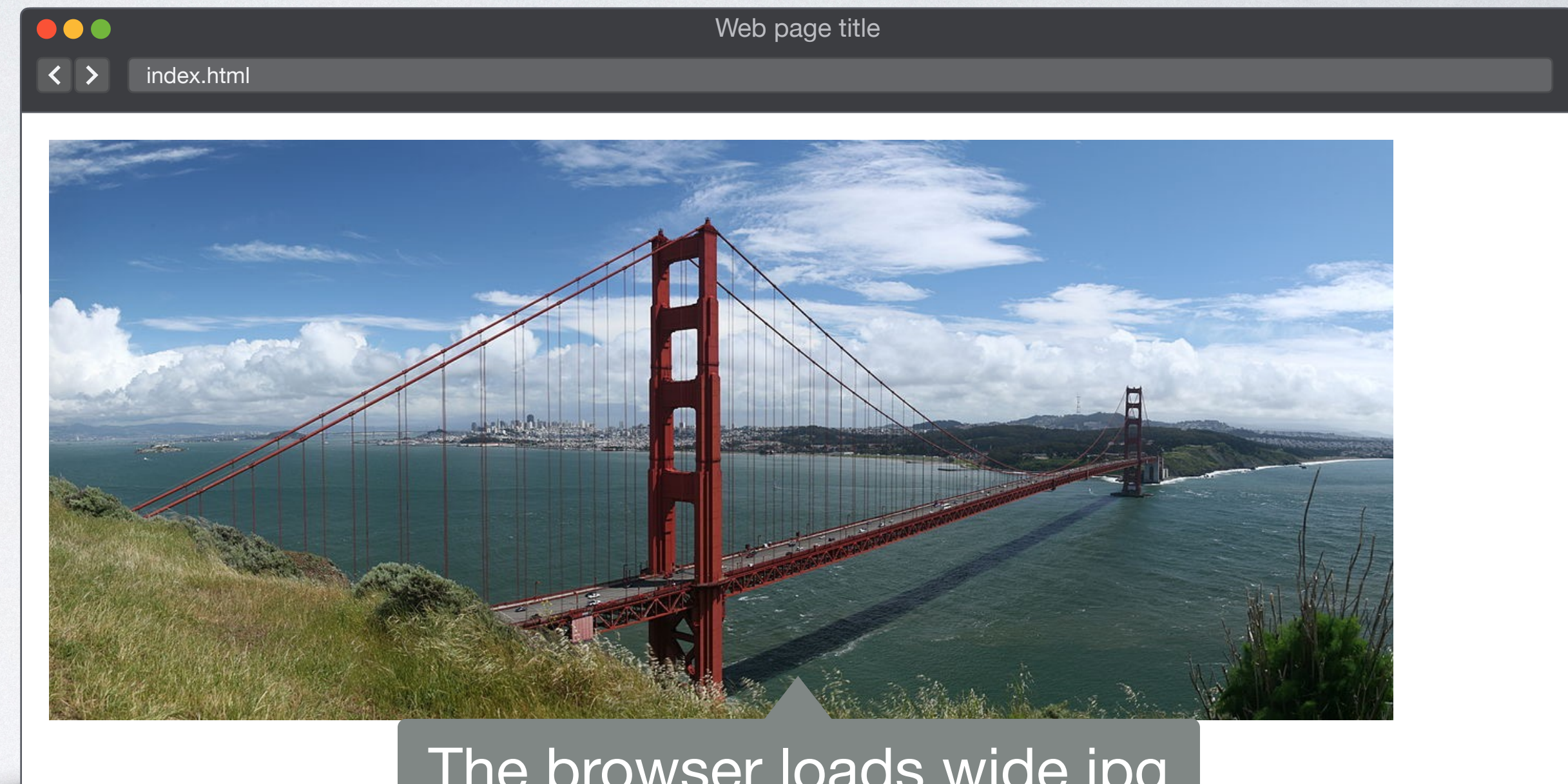
READY TO USE CODE

```
<body>
<picture>
  <source media="(max-width: 465px)"
    srcset="narrow.jpg">
  <source media="(min-width: 466px)"
    srcset="wide.jpg">
  
</picture>
</body>
```

The **picture** element is a container used to specify multiple `<source>` elements for a specific `` contained in it. The browser will choose the most suitable source according to the current layout and the device it will be displayed on.

SOURCE: [Mozilla Developer Network](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/picture).

Browser



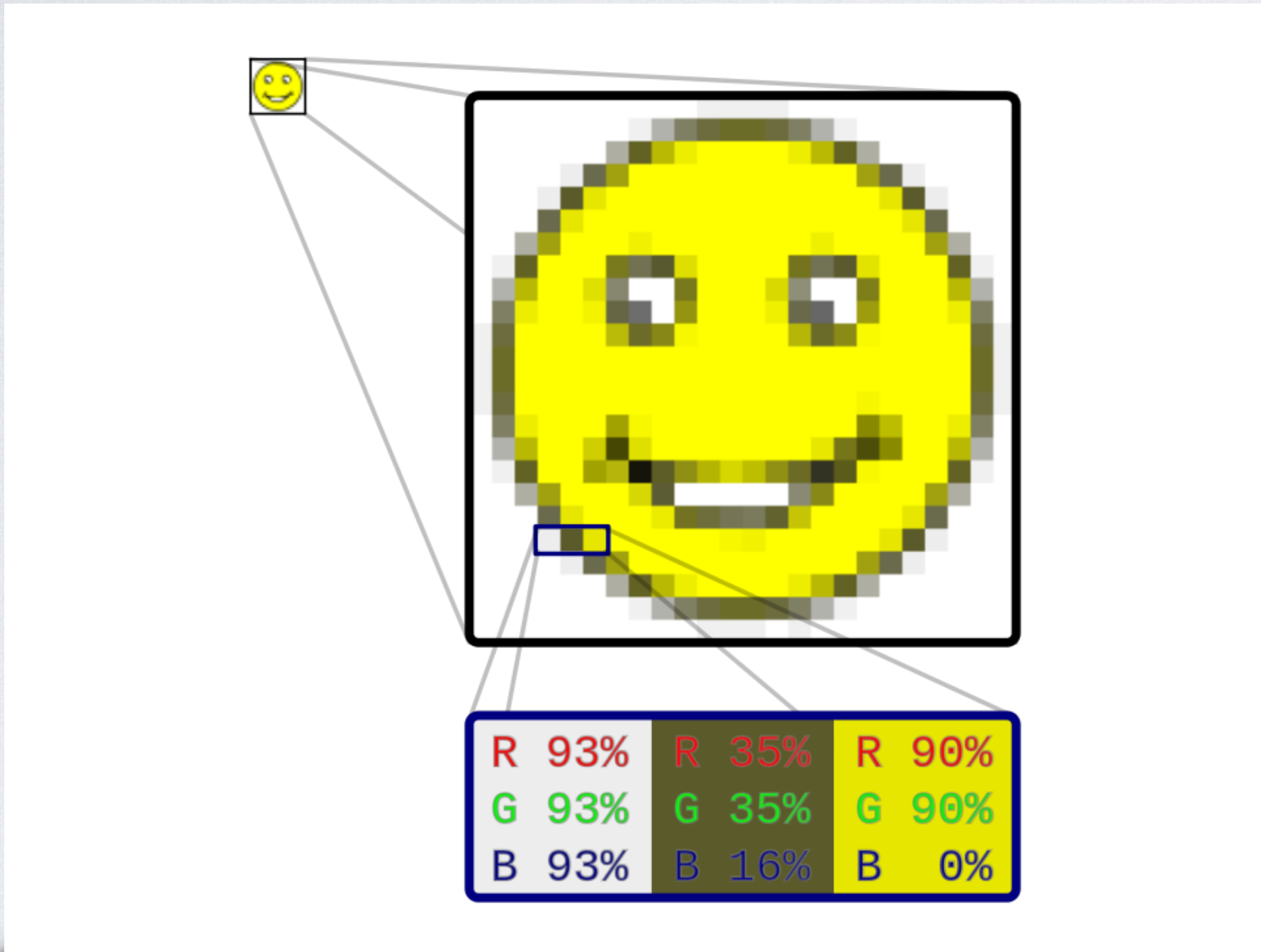
At least 466px

TYPES

Main differences between bitmap and vector images

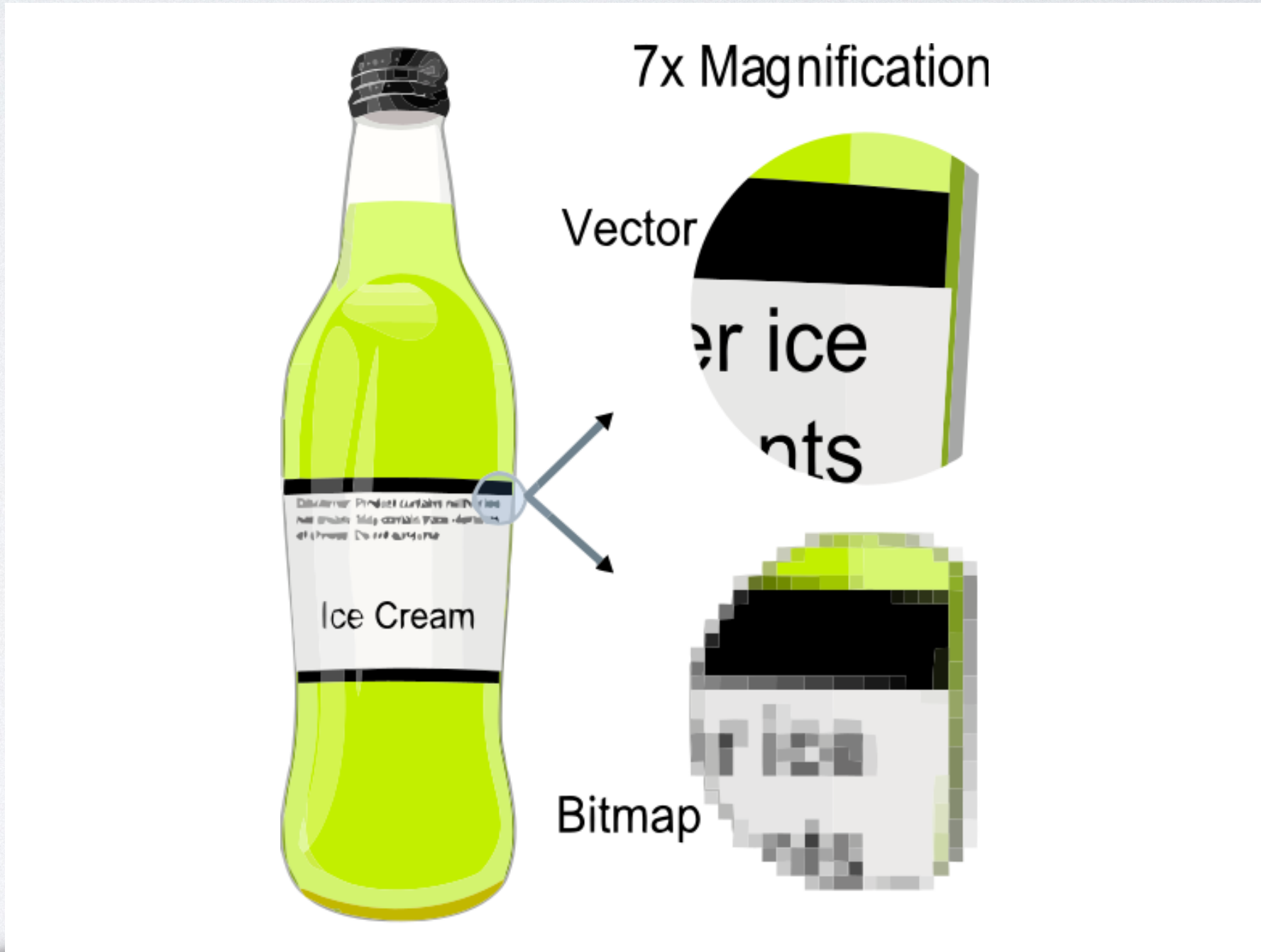
BITMAP IMAGES

Made up of a grid of pixels.



VECTOR IMAGES

Made up of polygons.



Vectors can be scaled to any size while retaining crisp image quality.

TYPES

BITMAP IMAGES



VECTOR IMAGES



BITMAP IMAGES

Made up from pixels.

Images are less precise than vectors.

Take up more storage space than vectors.

Take up more memory than vectors.

Demand less processing power than vectors.

VECTOR IMAGES

Made up from lines equations and calculations.

Images are more precise than bitmaps.

Take up less storage space than bitmaps.

Take up less memory than bitmaps.

Demand more processing power than bitmaps.

BITMAP IMAGES

Are great for photographs.



VECTOR IMAGES

Are great for shapes.



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FORMATS

File formats for bitmap and vector images

FORMATS

BITMAP IMAGES



GIF

Graphics Interchange Format

JPEG

Joint Photographic Experts Group

PNG

Portable Network Graphics

VECTOR IMAGES



SVG

Scalable Vector Graphics

BITMAP IMAGES

VECTOR IMAGES

GIF JPEG PNG

Colors

8 bit
256 colors



Lossless

✓
LZW compression

Transparency

✓
Transparent or opaque

Animations

✓

Open format

✗

BITMAP IMAGES

VECTOR IMAGES

GIF JPEG PNG

Colors

8 bit
256 colors

24 bit
16.7 million colors



Lossless



LZW compression



Transparency



Transparent or opaque



Animations



Open format



BITMAP IMAGES

VECTOR IMAGES

GIF JPEG PNG

Colors

8 bit
256 colors

24 bit
16.7 million colors

8 / 24 / 32 bit
16.7 million colors



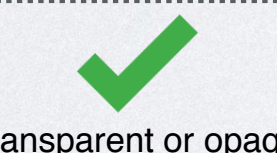
Lossless



LZW compression



Transparency



Transparent or opaque



Includes alpha channel

Animations



Only via unofficial extensions

Open format



W3C: PNG Development Group

BITMAP IMAGES

GIF

JPEG

PNG

Colors

8 bit
256 colors



24 bit
16.7 million colors



8 / 24 / 32 bit
16.7 million colors



Lossless



LZW compression



Transparency



Transparent or opaque



Includes alpha channel

Animations



Only via unofficial extensions

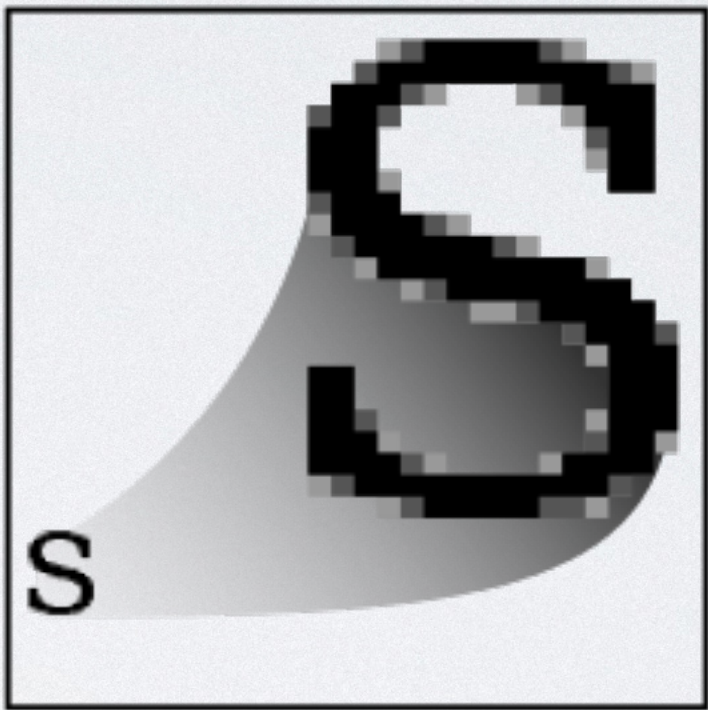
Open format



W3C: PNG Development Group

VECTOR IMAGES

SVG



Raster
.jpeg .gif .png



Vector
.svg

SVG is not a bitmap format so it can be resized with no loss in quality.

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STOCK IMAGES

Main types of licenses for specific uses

ROYALTY FREE

Payment. One-time payment to the licensor (not free).

Time. The image can be used in several projects without having to purchase any additional licenses.

Exclusivity. Non-exclusive right. Others may also purchase the same image for use.

PUBLIC DOMAIN

Payment. Free and not covered by any copyright (also images whose copyright have expired).

Time. No time limitations.

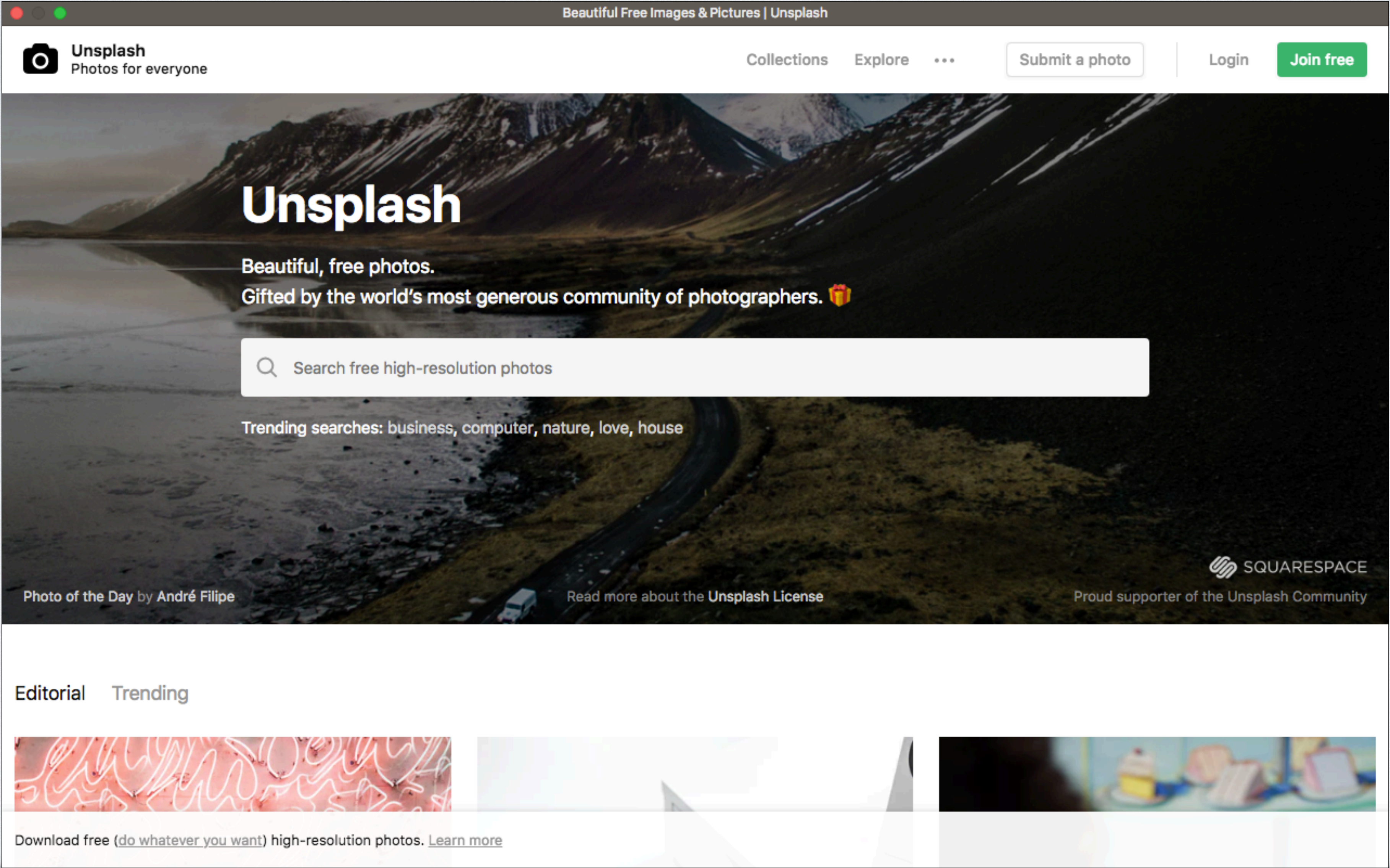
Exclusivity. Non-exclusive. Anyone can use public domain images.

CREATIVE COMMONS

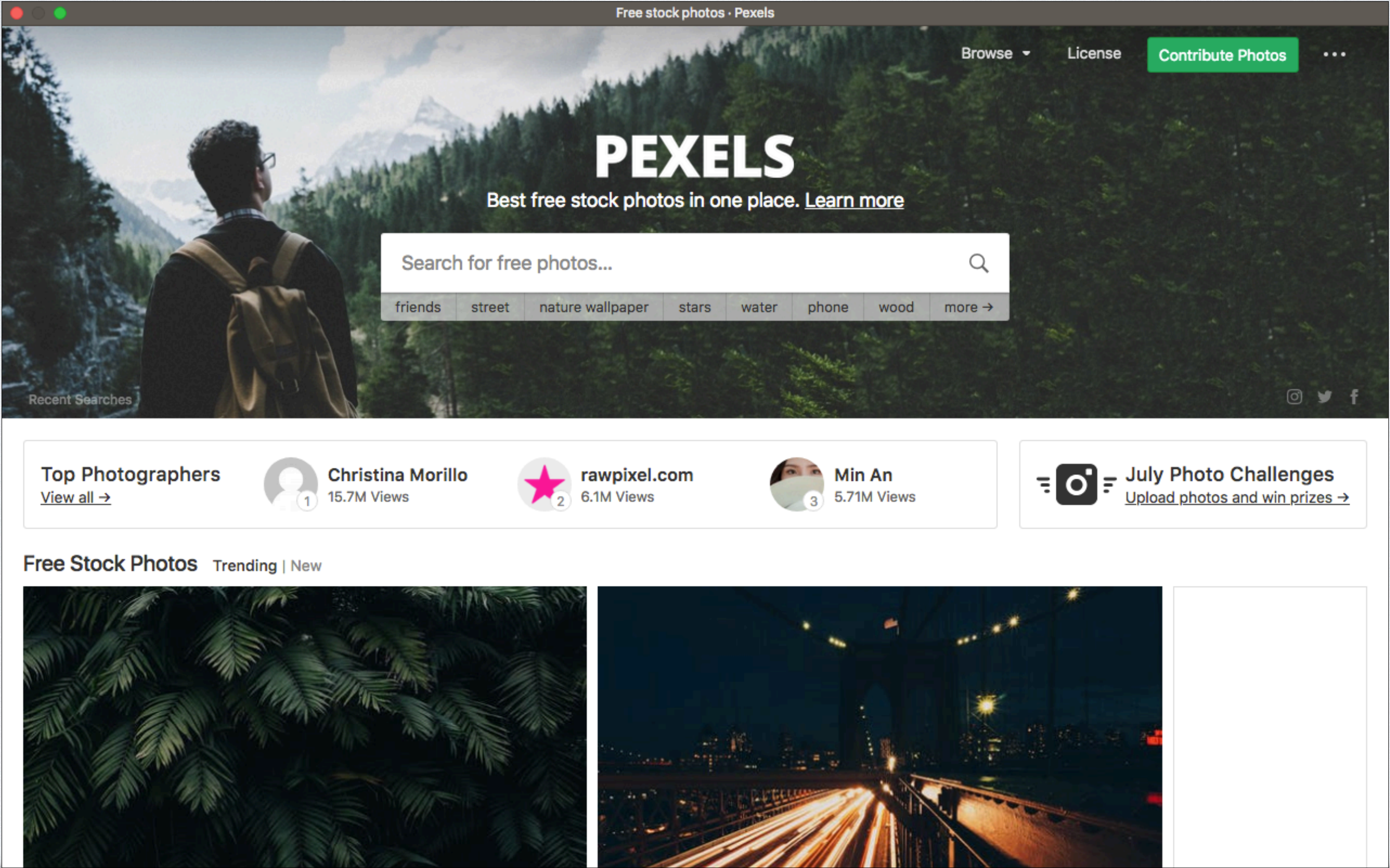
Payment. Free. The CC licenses differ by several combinations that condition the terms of distribution.

Time. No time limitations. Any work or copies of the work obtained under a Creative Commons license may continue to be used under that license.

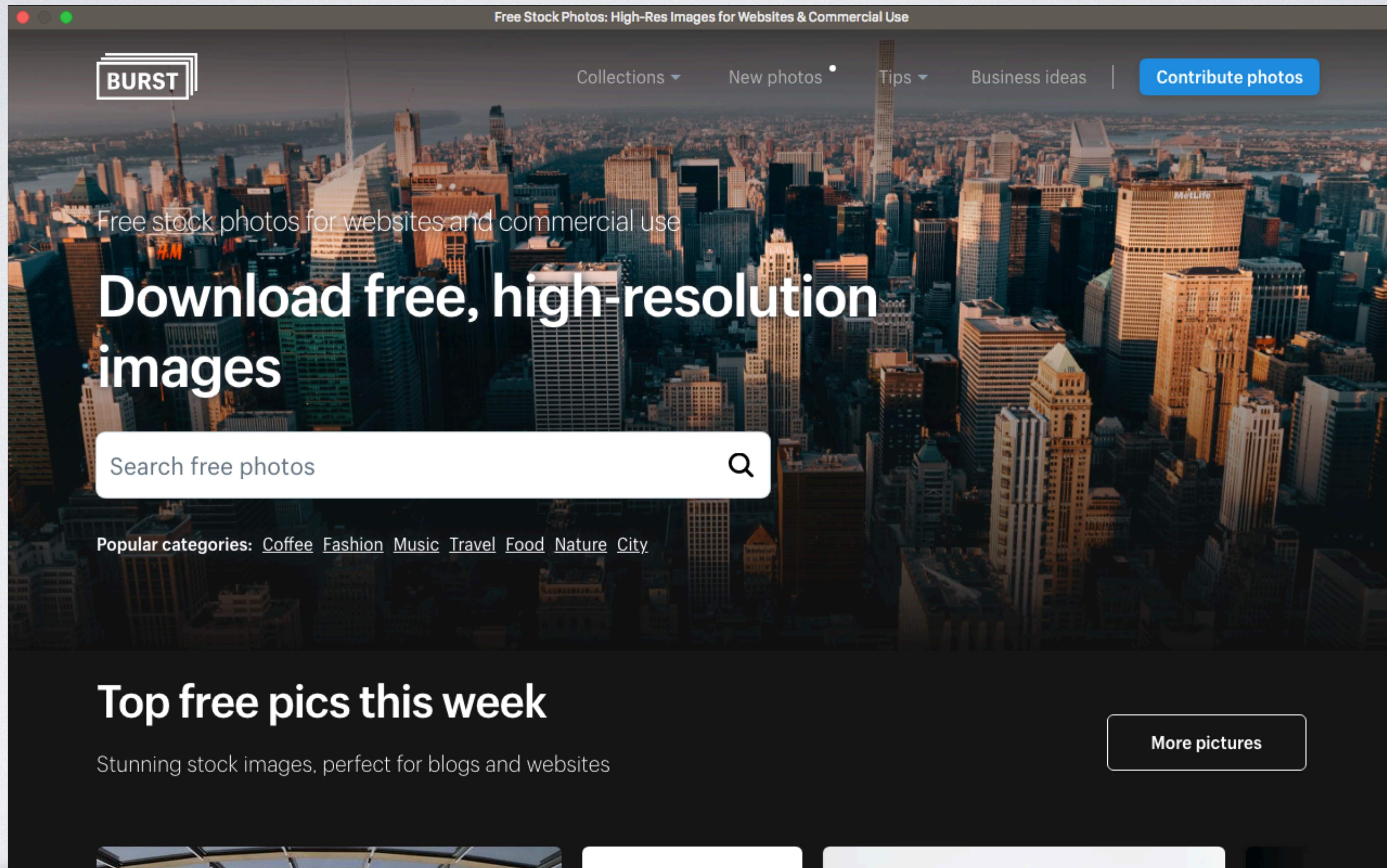
Exclusivity. Non-exclusive right. Others may also use the same image.



STOCK IMAGES: FREE



STOCK IMAGES: FREE





EDITORS




Professional tools to create / edit your images

BITMAP IMAGES



Adobe Photoshop  
License: proprietary.



Gimp   
License: open source / GPL.

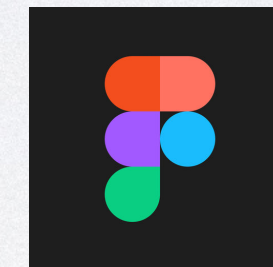
VECTOR IMAGES



Adobe XD  
License: proprietary.





Sketch 
License: proprietary.



Figma   
License: proprietary.



Adobe Illustrator  
License: proprietary.











Inkscape   
License: open source / GPL.

OPTIMIZATION

Improve your site's performance without compromising your images quality

OPTIMIZATION

	<u>FileOptimizer</u> 	<u>ImageOptim</u>  	<u>Pngcrush</u>   	<u>TinyPNG</u> 	<u>Compressor.io</u> 
SVG	✓	✓	✗	✗	✓
PNG	✓	✓	✓	✓	✓
JPG	✓	✓	✗	✓	✓
GIF	✓	✓	✗	✗	✓

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PLACEHOLDERS

Temporal images at the desired dimensions for your projects in progress

PLACEHOLDERS

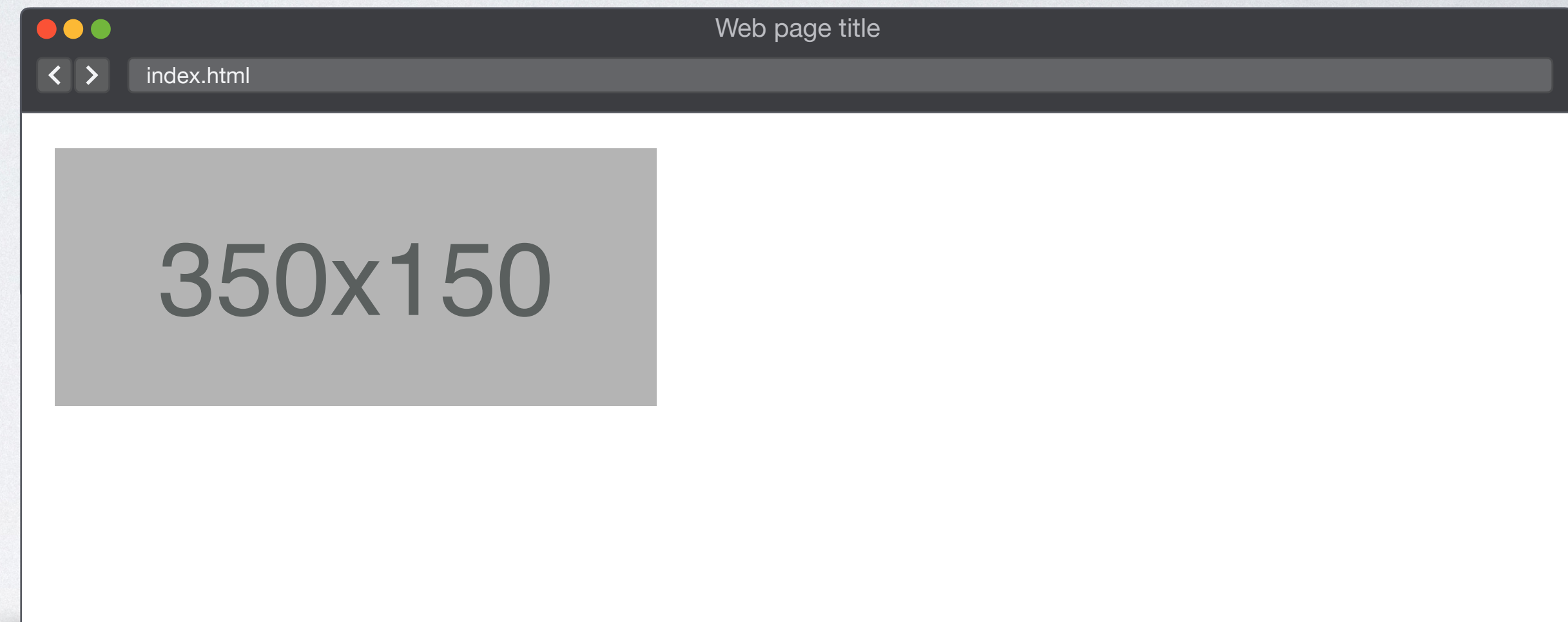
Editor

READY TO USE CODE

```
<body>  
  
</body>
```

How to use a placeholder image while your project is in progress and you still don't have the ready-to-publish images. Just change the image size after the placeholder's URL.

Browser



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YOU CAN CONTINUE THIS COURSE FOR FREE ON

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Learn front-end development at *rocket speed*

+ READY TO USE CODE

+ QUIZZES

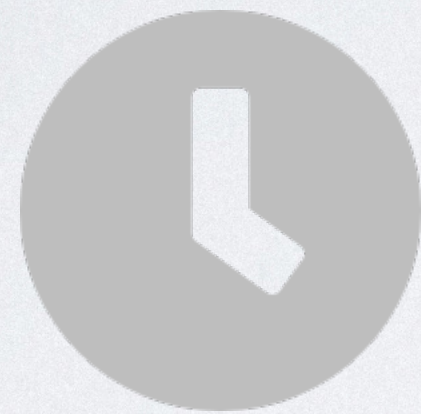
+ FREE UPDATES



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Learn front-end development at *rocket speed*



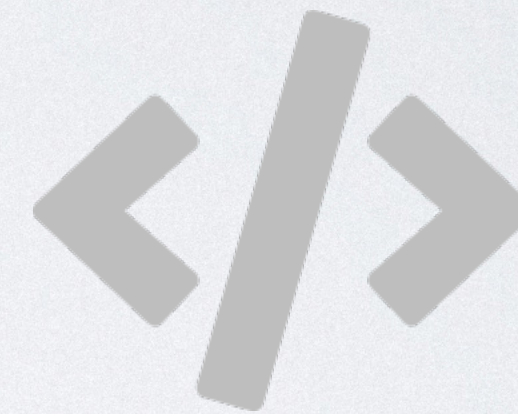
We respect your time

No more blah blah videos. Just straight to the point slides with relevant information.



Step by step guides

Clear and concise steps to build real use solutions. No missed points.



Ready to use code

Real code you can just copy and paste into your real projects.

HTML

HTML FUNDAMENTALS

Images



IN A ROCKET

Learn front-end development at *rocket speed*