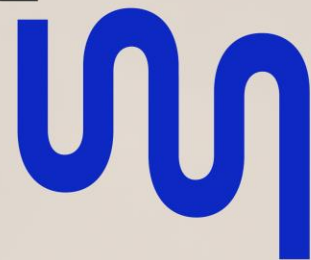




iscte

INSTITUTO
UNIVERSITÁRIO
DE LISBOA



emprego
digital



Contents

- Hypertext Markup Language (HTML)
- Cascading Style Sheets (CSS)
- Web best practices

HTML

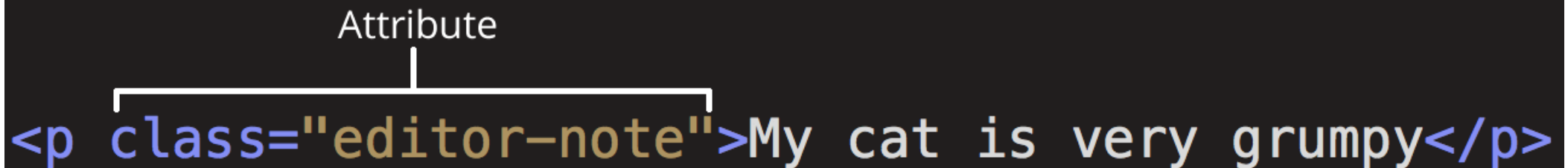
Hypertext Markup Language

HTML - What is it?

- Language to describe hypertext documents
 - Documents containing text, images, links
- World Wide Web Consortium (W3C) Standard
 - <https://www.w3.org/standards/webdesign/htmlcss>
- Language for describing the structure of Web pages (User Interface)
 - Using Markup

HTML Document

- Contains elements and text
- Each element has a:
 - Name
 - Set of attributes (name/value pair each)
 - ID; Class; Style; Title
 - Nested elements (child)
 - Text



The diagram shows an HTML element `<p class="editor-note">My cat is very grumpy</p>` on a dark background. A white bracket is positioned above the `class="editor-note"` part of the code. A vertical line extends from the center of this bracket upwards to the word "Attribute", which is centered above the bracket. This illustrates that the `class="editor-note"` is an attribute of the `<p>` element.

```
<p class="editor-note">My cat is very grumpy</p>
```

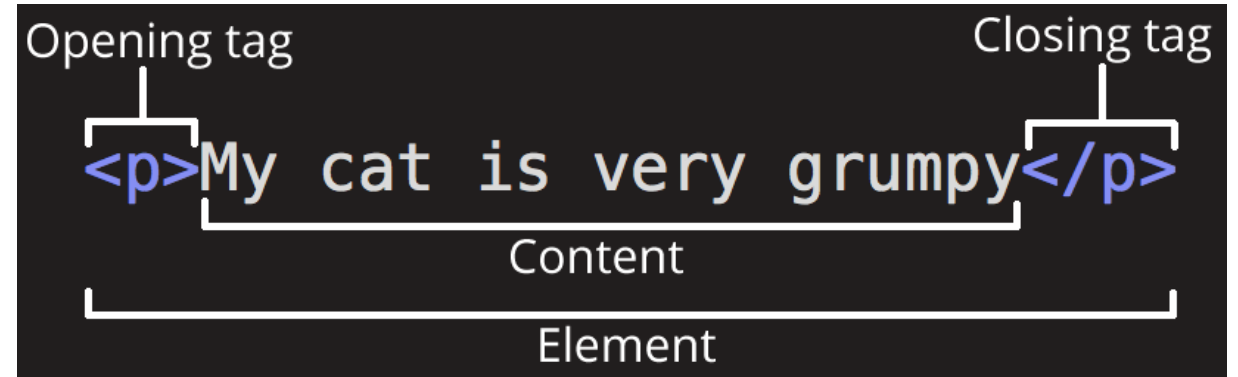
HTML Document

- In a html file, an element is represented by:
 - An opening tag (element's name and attributes)
 - Child elements and text
 - A closing tag, containing the name of the element

https://www.w3schools.com/html/html_intro.asp

Tags

- Each tag is enclosed in “<” and “>”
- A closing tag has the form </...>



- Try it yourself:
 - https://www.w3schools.com/html/tryit.asp?filename=tryhtml_default

Indentation

- HTML language ignores blank spaces and line feeds
 - Interpreted as word separators
- Documents can be rewritten to improve human readability

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>title</title>
    <link rel="stylesheet" href="style.css">
    <script src="script.js"></script>
  </head>
  <body>
    <!-- page content -->
  </body>
</html>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>title</title><link rel="stylesheet" href="style.css">
<script src="script.js"></script>
</head>
<body><!-- page content --></body>
</html>
```



```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>title</title>
    <link rel="stylesheet" href="style.css">
    <script src="script.js"></script>
  </head>
  <body>
    <!-- page content -->
  </body>
</html>
```

HTML comments

- Browsers ignore comments, effectively making comments invisible to the user
- The purpose of comments is to allow you to include notes in the code to explain your logic or coding

```
1 <p>I'm not inside a comment</p>  
2  
3 <!-- <p>I am!</p> -->
```

Headings

- `<h1>This is a Heading 1</h1>`
- `<h2>This is a Heading 2</h2>`
- `<h3>This is a Heading 3</h3>`
- `<h4>This is a Heading 4</h4>`
- `<h5>This is a Heading 5</h5>`
- `<h6>This is a Heading 6</h6>`

This is a Heading

This is a Heading

This is a Heading

This is a Heading

This is a Heading

This is a Heading

Hyperlinks

- Used to create a connection between two documents
- Created via anchor elements (<a>)
 - href: attribute that defines hyperlinks' destination
 - Text or image: what the user sees
 - (Optionally) name: anchor identification that can be reached via #<name>

```
<a href="https://upskill.pt/">
```

PROJETO UPSKILL – DIGITAL SKILLS & JOBS

```
</a>
```

Lists

- Defined with elements:
 - ul: unordered list
 - ol: ordered list

```
<ol>  
  <li>Numbered 1st item</li>  
  <li>Numbered 2nd item</li>  
  <li>Numbered 3rd item</li>  
</ol>
```

1. Numbered 1st item
2. Numbered 2nd item
3. Numbered 3rd item

```
<ul>  
  <li>Item</li>  
  <li>Item</li>  
  <li>Item</li>  
</ul>
```

- Item
- Item
- Item

Tables

- A table contains:
 - A table element
 - One or more rows (nested element `<tr>`)
 - Each row has either table headings (`<th>`) or table data (`<td>`)

https://www.w3schools.com/html/html_tables.asp

Forms

- Allows the creation of forms to be filled in
- Filled in information is sent to the HTTP server
- `<form> ... </form>`
 - `action = url`
 - `method = get | post`
 - `target = name`
 - `enctype = ContentType (application/x-www-form-urlencoded or multipart/form-data for <input type="file">)`

Forms

```
1 <form action="/my-handling-form-page" method="post">
2   <ul>
3     <li>
4       <label for="name">Name:</label>
5       <input type="text" id="name" name="user_name">
6     </li>
7     <li>
8       <label for="mail">E-mail:</label>
9       <input type="email" id="mail" name="user_email">
10    </li>
11    <li>
12      <label for="msg">Message:</label>
13      <textarea id="msg" name="user_message"></textarea>
14    </li>
15  </ul>
16 </form>
```


Forms - <input>

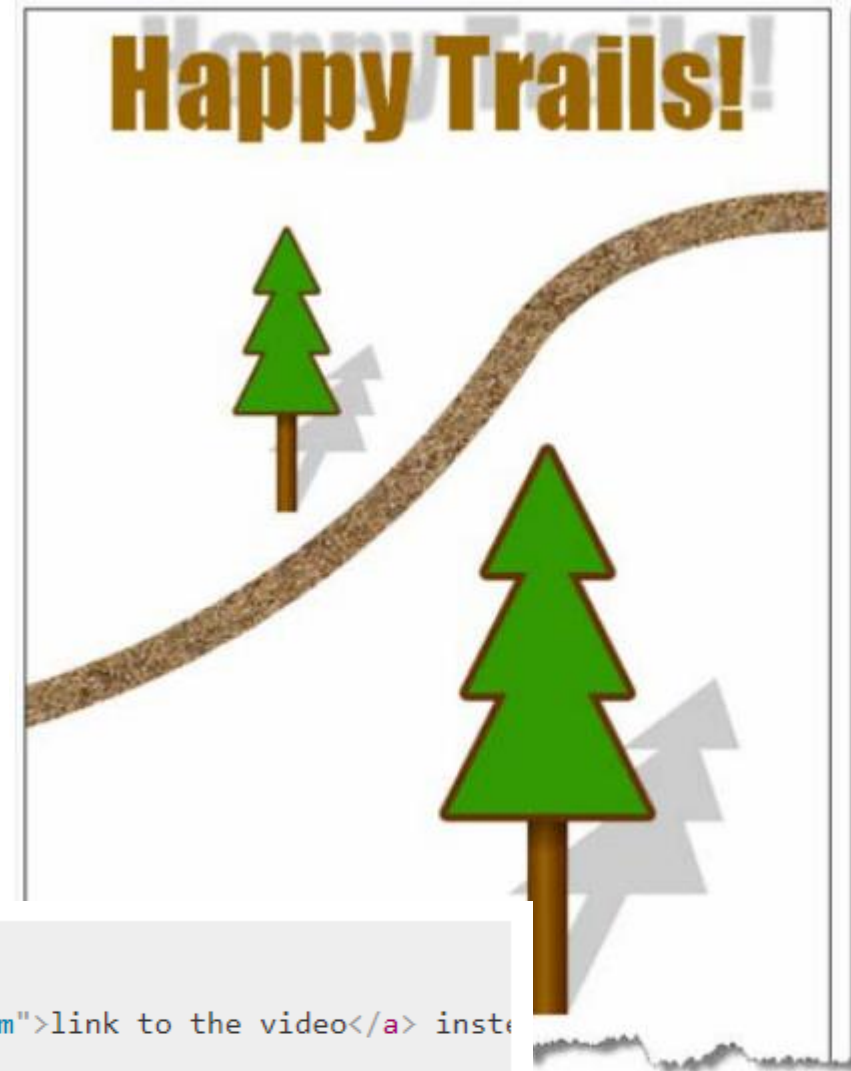
- <input> specifies input fields where users can enter data
 - type (e.g., text, password, file, checkbox, radio, button, image, submit)
 - name
 - value
 - size
 - maxlength
 - src
 - disabled
 - Readonly
 - https://www.w3schools.com/tags/tag_input.asp

Summary of structural elements

- Most used:
 - html; head; title; body
 - p; img; a; table (tr, th, td); h1...h6; ul; ol (li)
 - br (break); hr (horizontal rule)
 - Form; div; span
- HTML Documentation:
 - <https://developer.mozilla.org/en-US/docs/Learn/HTML>
- List of all HTML tags:
 - <https://www.w3schools.com/tags/default.asp>

HTML5

- New [sectioning](#) elements – encourages *semantic* markup
 - Header, footer, section, article, aside, nav
- New canvas, [video and audio](#) elements



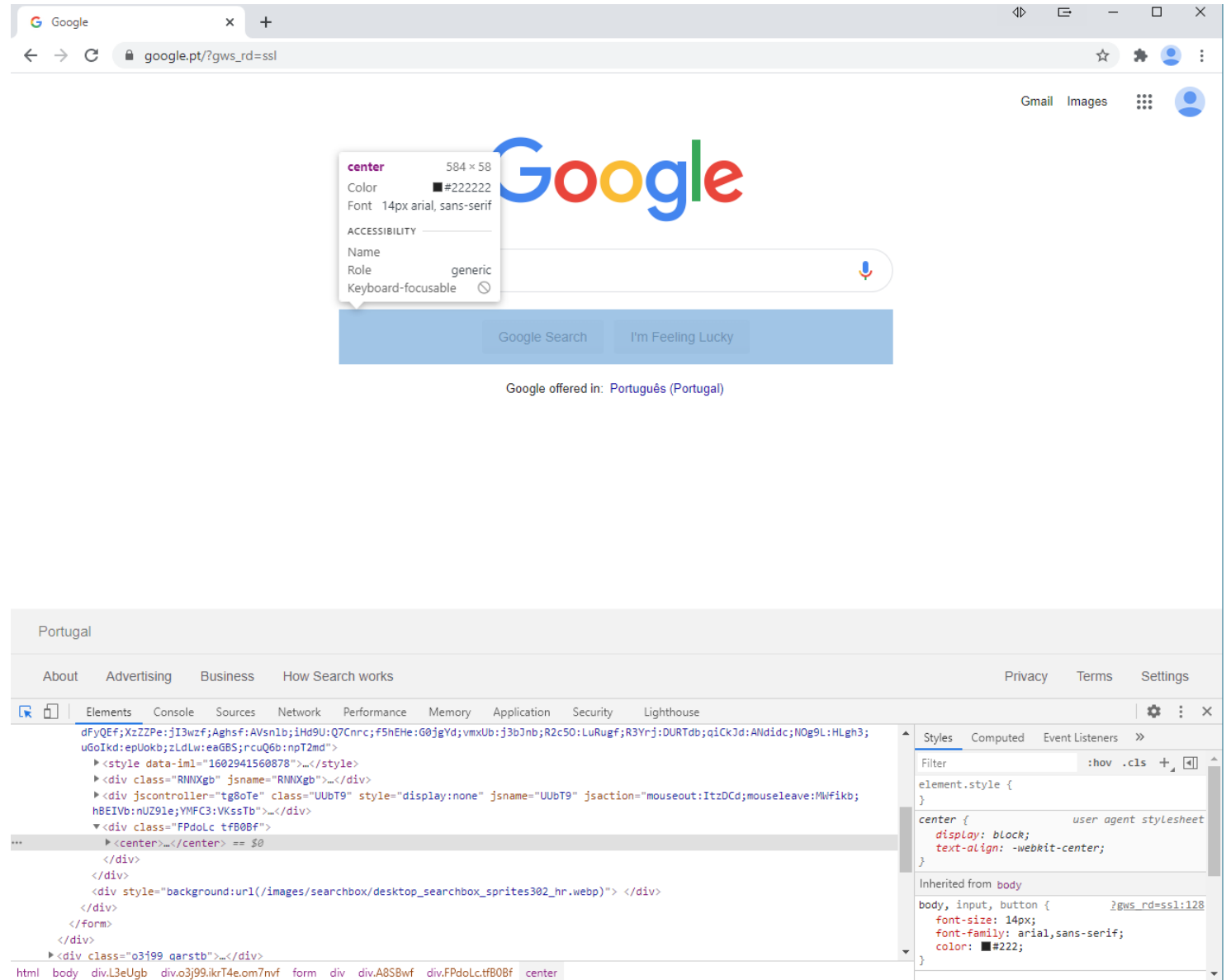
[Lubbers, 2011]

```
1 <video src="rabbit320.webm" controls>
2   <p>Your browser doesn't support HTML5 video. Here is a <a href="rabbit320.webm">link to the video</a> instead.
3 </video>
```

<https://html.spec.whatwg.org/>

Debugging

Access Developer Tools
F12 in your browser



CSS

Cascading Style Sheets

CSS - What is it?

- CSS is a rule-based language for describing the presentation of Web pages, including colors, layout, and fonts
 - Maintained by the CSS Working Group <https://www.w3.org/Style/CSS/>
- Allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers
- The separation of HTML from CSS makes it easier to maintain sites, share style sheets across pages, and tailor pages to different environments
 - separation of structure (or: content) from presentation

CSS - What is it?

- E.g., "I want the main heading on my page to be shown as large red text."

```
1  h1 {  
2      color: red;  
3      font-size: 5em;  
4  }
```

https://developer.mozilla.org/en-US/docs/Learn/CSS/First_steps/What_is_CSS

CSS - What is it?

- E.g., "I want the main heading on my page to be shown as large red text."

```
1  h1 {  
2      color: red;  
3      font-size: 5em;  
4  }
```

Selector: we are styling level one headings (<h1>).

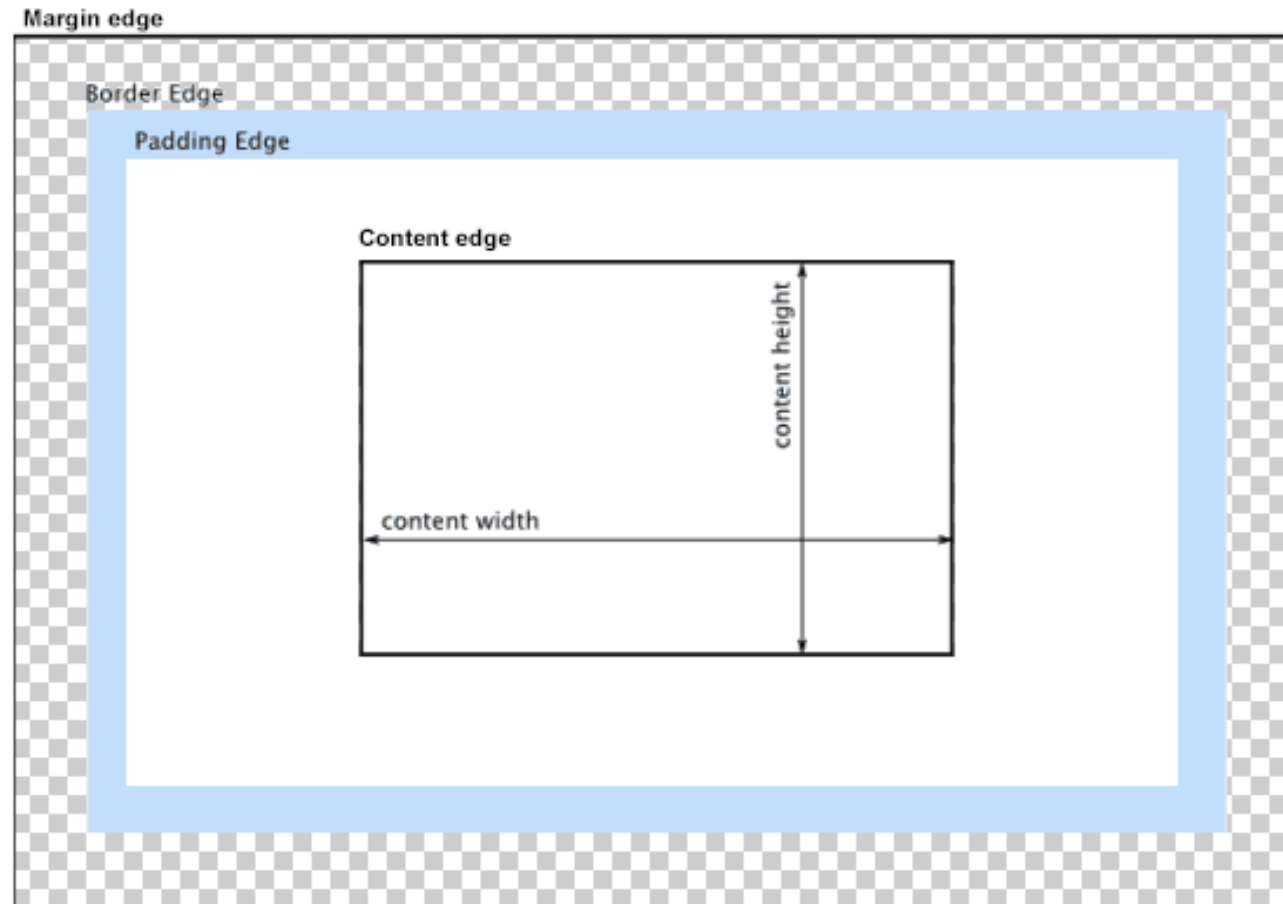
Declarations: property and value pairs. Before the colon, we have the property, and after the colon, the value.

CSS selectors

- Universal
- Type
- Class
- ID
- Attribute
- Selector list
- Combinators

https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Selectors

CSS basic box model



https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Box_Model/Introduction_to_the_CSS_box_model

Cascading?

- Which rule should be applied when there is a conflict?
 - when two rules apply that have equal specificity the one that comes last in the CSS is the one that will be used

This is my heading.

```
h1 {  
  color: red;  
}  
h1 {  
  color: blue;  
}
```

```
<h1>This is my heading.</h1>
```

Cascading – And with different specificity?

- Which rule should be applied when there is a conflict?
 - Selectors with higher specificity are selected

This is my heading.

```
.main-heading {  
  color: red;  
}  
  
h1 {  
  color: blue;  
}
```

```
<h1 class="main-heading">This is my heading.</h1>
```

Cascading – And also inheritance...

- some CSS property values set on parent elements are inherited by their child elements

As the body has been set to have a color of blue this is inherited through the descendants.

We can change the color by targetting the element with a selector, such as this `span`.

```
body {  
  color: blue;  
}  
  
span {  
  color: black;  
}
```

```
<p>As the body has been set to have a color of blue this is inherited through  
the descendants.</p>  
<p>We can change the color by targetting the element with a selector, such as  
this <span>span</span>.</p>
```

Add CSS to HTML Document

- `<link rel="stylesheet" href="styles.css">`

```
li em {  
  color: rebeccapurple;  
}  
  
h1 + p {  
  font-size: 200%;  
}
```

```
<h1>I am a level one heading</h1>  
  
<p>This is a paragraph of text. In the text is a <span>span element</span>  
and also a <a href="http://example.com">link</a>.</p>  
  
<p>This is the second paragraph. It contains an <em>emphasized</em> element.  
</p>  
  
<ul>  
  <li>Item <span>one</span></li>  
  <li>Item two</li>  
  <li>Item <em>three</em></li>  
</ul>
```

I am a level one heading

This is a paragraph of text. In the text is a span element and also a [link](http://example.com).

This is the second paragraph. It contains an *emphasized* element.

- Item one
- Item two
- Item *three*

Example

- CSS Zen Garden: The Beauty of CSS Design
 - <http://www.csszengarden.com/>
- Ensure that there is no styling information in
 - <http://www.csszengarden.com/examples/index>
- Analyze a css example file
 - <http://www.csszengarden.com/examples/style.css>

—— Web best practices

Web best practices

- Uncertainty comes from the fact that you don't know what combination of technology each user will use to view your web site
 - User 1 might be looking at it on an iPhone, with a small, narrow screen
 - User 2 might be looking at it on a Windows laptop with a widescreen monitor attached to it
 - User 3 might be blind, and using a screen reader to read the web page out to them
 - User 4 might be using an old desktop machine that can't run modern browsers

https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/The_web_and_web_standards

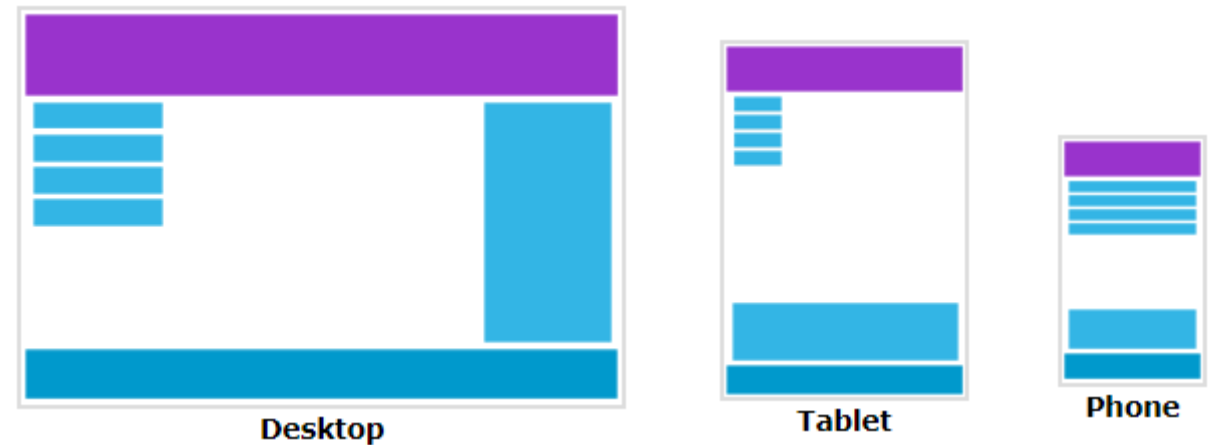
Web best practices

- Design defensively

*“we are trying to make the web work for all,
as much as possible”*

Web best practices

- Cross-browser compatibility
- Responsive web design
- [Performance](#)
- [Accessibility](#)
- Internationalization
- Privacy & Security



Media queries

- Adapt a site or app depending on the presence or value of various device characteristics and parameters
- Key component of responsive design
 - E.g., shrink the font size on small devices or bump up the size of buttons on touchscreens

```
1 | @media screen and (min-width: 30em) and (orientation: landscape) { ... }
```

Media queries for accessibility

- **Reduced Motion**

- Blinking and flashing animation can be problematic for people with cognitive concerns

- Attention Deficit Hyperactivity Disorder (ADHD)

- Certain kinds of motion can be a trigger for

- Vestibular disorders, epilepsy, and migraine and Scotopic sensitivity

- **High Contrast Mode**

HTML

```
1 | <div class="animation">animated box</div>
```

CSS

```
1 | .animation {  
2 |     -webkit-animation: vibrate 0.3s linear infinite both;  
3 |     animation: vibrate 0.3s linear infinite both;  
4 | }  
5 |  
6 | @media (prefers-reduced-motion: reduce) {  
7 |     .animation {  
8 |         animation: none;  
9 |     }  
10 | }
```

https://developer.mozilla.org/en-US/docs/Web/CSS/Media_Queries/Using_Media_Queries_for_Accessibility

Bootstrap

Build fast, responsive sites with Bootstrap

Quickly design and customize responsive mobile-first sites with Bootstrap, the world's most popular front-end open source toolkit, featuring Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful JavaScript plugins.

[Get started](#)[Download](#)

Currently v4.5.3



<https://getbootstrap.com/docs/4.5/getting-started/introduction/>

Bootstrap layouts

- Components and options for laying out your Bootstrap project, including:
 - wrapping containers,
 - a grid system,
 - a flexible media object, and
 - responsive utility classes

Bootstrap components

A simple primary alert—check it out!

A simple secondary alert—check it out!

A simple success alert—check it out!

A simple danger alert—check it out!

A simple warning alert—check it out!

Email address

We'll never share your email with anyone else.

Password

☐ Check me out

Submit

- 64x64

List-based media object
Cras sit amet nibh libero, in gravida nulla. Nulla vel metus scelerisque ante sollicitudin. Cras purus odio, vestibulum in vulputate at, tempus viverra turpis. Fusce condimentum nunc ac nisi vulputate fringilla. Donec lacinia congue felis in faucibus.
- 64x64

List-based media object
Cras sit amet nibh libero, in gravida nulla. Nulla vel metus scelerisque ante sollicitudin. Cras purus odio, vestibulum in vulputate at, tempus viverra turpis. Fusce condimentum nunc ac nisi vulputate fringilla. Donec lacinia congue felis in faucibus.
- 64x64

List-based media object
Cras sit amet nibh libero, in gravida nulla. Nulla vel metus scelerisque ante sollicitudin. Cras purus odio, vestibulum in vulputate at, tempus viverra turpis. Fusce condimentum nunc ac nisi vulputate fringilla. Donec lacinia congue felis in faucibus.

Components

Alerts

Badge

Breadcrumb

Buttons

Button group

Card

Carousel

Collapse

Dropdowns

Forms

Input group

Jumbotron

List group

Media object

Modal

Navs

Navbar

Pagination

Popovers

Progress

Scrollspy

Spinners


Toasts

Tooltips

Bootstrap Examples

Examples

Quickly get a project started with any of our examples ranging from using parts of the framework to custom components and layouts.

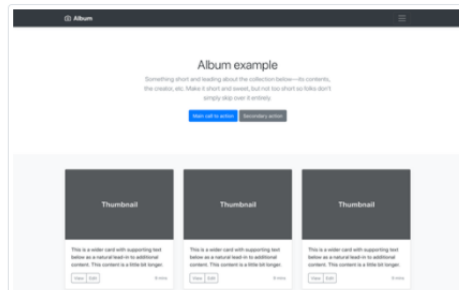
[Download examples](#)[Download source code](#)

Access the leading developer portal for multi-chain data. Get your crypto app started in minutes.

ads via Carbon

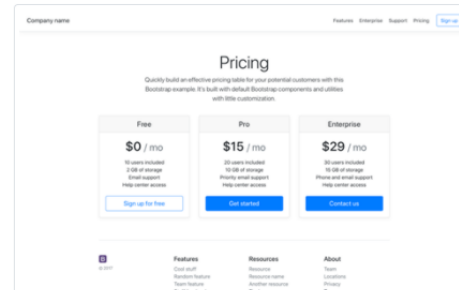
Custom components

Brand new components and templates to help folks quickly get started with Bootstrap and demonstrate best practices for adding onto the framework.



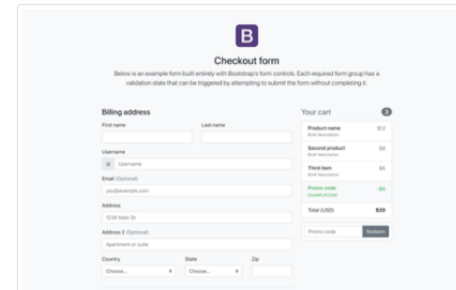
Album

Simple one-page template for photo galleries, portfolios, and more.



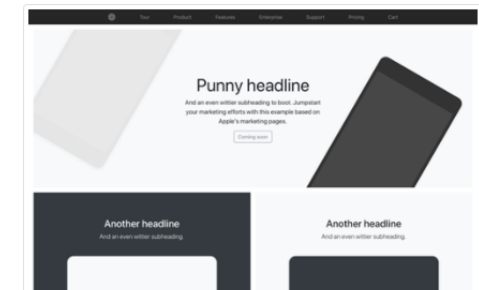
Pricing

Example pricing page built with Cards and featuring a custom header and footer.



Checkout

Custom checkout form showing our form components and their validation features.



Product

Lean product-focused marketing page with extensive grid and image work.

<https://getbootstrap.com/docs/4.5/examples/>

Material Design

- Material is a design system created by Google to help teams build high-quality digital experiences for Android, iOS, Flutter, and the web
- Principles:
 - Material is the metaphor
 - Bold, graphic, intentional
 - Motion provides meaning
- [Components](#)
- [Theming](#)

References

- Peter Lubbers, Brian Albers, and Frank Salim. “Pro HTML5 Programming (2nd. ed.)”. Apress, USA, 2011

Thank you

O futuro profissional começa aqui

iscte

INSTITUTO
UNIVERSITÁRIO
DE LISBOA



emprego
digital



UPskill