HTML

HTML?

- Stands for **HyperText Markup Language**

- Standard language to build a webpage

    - Describes structure

    - Imports needed files

    - Works alone

HTML - Tags

- HTML Elements are represented with **tags**

- Tags are words between '<' and '>' , like <html>, <body>

- **Usually** tags need to be opened (<html>) and closed (</html>)

- Each tag represents a part or an element of the website
  - <html>, <head>, <body>
  - <header>, <nav>, <main>, <article>, <section>, <footer>
  - <img>, <a>, <iframe>, <div>, <p>

HTML - Tags

```
<!DOCTYPE html>
<html>
    <head>
        <title>This is a webpage</title>
    </head>
    <body>
        <h1> Big heading! </h1>
        <hr>
        <p> This is paragraph </p>
        <span> This is text as well </span>
    </body>
</html>
```

HTML - Tags

- All HTML files contain <html>, <head> and <body> tags

- <head> contains what "cannot be seen"
  - title
  - metas (to give information about the website)
  - Code to load (css, js...)

- <body> holds "what we see" in a website

HTML - Tags

- Basic
  - <!DOCTYPE html>
  - <html>, <head>, <body>
- Structure
  - <div>, <table>, <header>, <main>, <nav>, <footer>

- Headings
  - <h1>, <h2>, <h3> … <h6>
- Text
  - <p>, <span>
  - <b>, <u>, <i>, <strong>, <em>

- Media
  - <img>, <audio>, <video>
- Links
  - <a>

HTML - Attributes

- Provide **additional information** and are specific to each tag

- Always on the **start tag**

- Usually come in **name/value** pairs: name = "value"
  - href = "image.png"
  - colspan = 2

- We use a **space** to separate multiple attributes
  - <div **id**="first" **class**="maps" **style**="color: red">

HTML - Attributes

```html
<!DOCTYPE html>
<html lang="es-ES">
    <head>
        <meta charset="UTF-8">
        <title> This is a different webpage </title>
        <!-- We can also comment -->
    </head>
    <body>
        <img src="google.jpg" alt="Google" width="104" height="142"/>
        <span style="color:blue"> Google logo </span>
    </body>
</html>
```

HTML - Attributes

- Basic
  - <html lang="es-ES">
  - <meta charset="UTF-8">

- General
  - id, class
  - style

- Specific
  - href, src
  - colspan, rowspan
  - type, name, value, alt, placeholder

HTML - Links

- Externals
    - Google
    - <img src="https://www.google.com/img/potato.png">

- Internals
    - <a href="index.html">
    - <a href="#about">
    - <img src="images/popcorn.png">

HTML - Forms

- Traditional way to send information to the server

- Mandatory **<form>**, **</form>** and **<input type="submit">**

- Attribute "action" in <form>: where to send the info

- Mandatory attributes in <input>
    - "name": to identify the field
    - "value": to get the value associated with the name
    - A "value" can be void but "name" <u>cannot</u>

- We **can** use <input> **without a form**

HTML - Forms

```html
<form action="/action_page.php">
  <label for="name">First name: </label>
  <input type="text" name="firstname" value="Mickey" id="name">
  <br>
  <label for="color">Color: </label>
  <input type="color" name="color" id="color" value="#2fb8d0">
  <br>
  <label for="bday">Birthday: </label>
  <input type="date" name="bday" id="bday">
  <br><br>

  <input type="submit" value="Submit">
</form>
```

HTML - Forms: Fieldset & Legend

```html
<form action="/action_page.php">
    Password: <input type="password" name="pass" placeholder="your password here"><br>
    <fieldset>
        <legend>Dog:</legend>
        Email: <input type="email" name="email" placeholder="example@email.com" ><br>
        Number: <input type="number" name="number" value="1" max="5"><br>
        Size: <input type="range" name="range" value="4" step="2"><br>
        Url: <input type="url" name="url" placeholder="http://www.google.com"><br>
    </fieldset>
    <input type="submit" value="Submit">
</form>
```

HTML - Forms: Select & Optgroup

```html
<form action="/action_page.php">
    Best color:
  <select name="colors">
    <optgroup label="Cold">
      <option value="blue">Blue</option>
      <option value="green">Green</option>
    </optgroup>
    <optgroup label="Warm">
      <option value="red">Red</option>
      <option value="yellow" selected>Yellow</option>
    </optgroup>
  </select>
  <br><br>
  <input type="submit" value="Submit">
</form>
```

HTML - Forms: Datalist

```html
<form action="/action_page.php">
    Best color:
  <input list="colors" name="color">
  <datalist id="colors">
    <option value="Blue"></option>
    <option value="Red"></option>
    <option value="Yellow"></option>
    <option value="Green"></option>
  </datalist>
  <br><br>
  <input type="submit" value="Submit">
</form>
```

HTML - Forms: Radio button & Check box

```html
<form action="/action_page.php">
  <label for="male">Male: </label>
  <input type="radio" name="gender" value="male" id="male" checked><br>
  <label for="female">Female: </label>
  <input type="radio" name="gender" value="female" id="female"><br>
  <label for="other">Other: </label>
  <input type="radio" name="gender" value="other" id="other"><br>

  <input type="checkbox" name="gender2" value="NB"> Non-binary <br>
  <input type="checkbox" name="gender3" value="AH"> Apache Helicopter <br>

  <input type="submit" value="Submit">
</form>
```

HTML - Forms: Textarea

```html
<form action="/action_page.php">
    Essay:
    <textarea name="message" rows="10" cols="30">
        You need to be careful with textareas because, for example, this line is one line break
        from the start, so sometimes you are adding spaces or breaks without knowledge of it.
    </textarea>
  <br><br>
  <input type="submit" value="Submit">
</form>
```
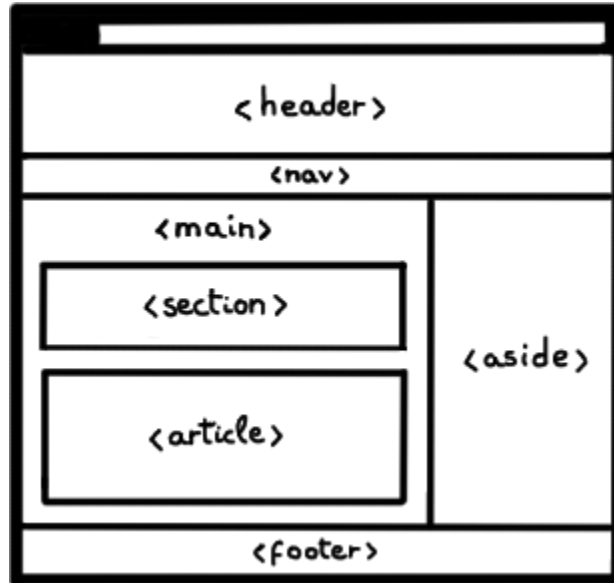
HTML - Containers

- To organize

- To move content / style the webpage

- **<div>** and **<table>** , traditionally

- HTML5 adds semantic
  - <header>
  - <footer>
  - <section>

HTML - Containers

HTML - Containers: Div

```html
<div>
    <p> This is something we will be able to move </p>
    <br>
</div>
<div>
    <span> This div contains other divs inside </span>
    <div><br></div>
    <div><br></div>
</div>
```
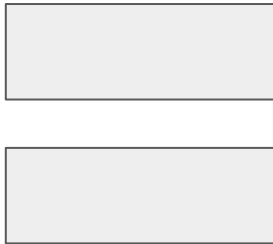
HTML - Containers: Table

```html
<table>
  <tr>
    <th>Name</th>
    <th>Dog name</th>
    <th>Dog age</th>
  </tr>
  <tr>
    <td>Caroline</td>
    <td>Lassie</td>
    <td>1</td>
  </tr>
</table>
```

HTML - Display: Inline or Block

- Inline

- Block

- Width and height

- Margins

- Line break

HTML - Canvas

- To draw graphics

- Attributes width and height **must** be set (not CSS!)

- JS required

```html
<canvas id="canvas" width="300" height="300"></canvas>
```

HTML - Media

- Video and audio
  - Attributes: controls, autoplay...
  - Be careful with media types
  - Text is displayed <u>only</u> if tag not supported

```
<video width="330" height="250" controls autoplay>
  <source src="popcorn.mp4" type="video/mp4">
  <source src="popcorn.webm" type="video/webm">
  This browser does not support the video tag.
</video>
```

```
<audio controls>
  <source src="birds.wav" type="audio/wav">
  <source src="birds.mp3" type="audio/mpeg">
  Your browser does not support the audio element.
</audio>
```

HTML - Iframes

- To insert a webpage inside another

- Do <u>not</u> abuse it
  - Loading time
  - Security problems

```
<iframe width="560" height="315" src="https://www.youtube.com/embed/PGmOP-NybtU" frameborder="0"
allow="autoplay; encrypted-media" allowfullscreen></iframe>
```

HTML - APIs

- HTML Geolocation

- HTML Drag and Drop

- HTML Local Storage

- HTML Application Cache

- HTML Web Workers

- HTML SSE