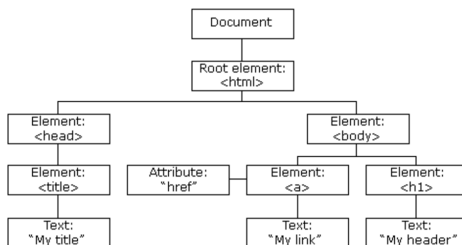# Introduction to Web Development Cheat Sheet

## Client & Server

A **client** is the computer that requests information.

A **server** is a computer in the network that listens to incoming requests and provides the information requested (e.g., a website or file).

## HTML Structure

The structure of an HTML document is defined by the **DOM (Document Object Model)**. The DOM is a tree-based diagram, e.g.:



## Basic Tags

**\<html>\</html>**
    Creates HTML document

**\<head>\</head>**
    Sets off title and other information that isn't displayed on the web page

**\<body>\</body>**
    Defines visible area of the HTML document

**\<title>\</title>**
    Defines title of the web page (this title will be shown in the browser's tab bar)

## Text Tags

**\<h1>\</h1>** to **\<h6>\</h6>**
    Creates headlines, \<h1> defines the most important/largest headline, \<h6> the smallest headline

**\<b>\</b>** or **\<strong>\</strong>**
    Defines bold text

**\<i>\</i>** or **\<em>\</em>**
    Creates italicized text

## Formatting Tags

**\<p>\</p>**
    Creates a text paragraph

**\<br>**
    Inserts a line break

## Content Tags

**\<section>\</section>**
    Defines a thematic grouping in a document, typically with a heading

**\<div>\</div>**
    Defines a group of block-elements to format them with CSS (by default, browsers always place a line break before and after the \<div> element)

**\<span>\</span>**
    Defines a group of inline-elements, e.g., provides a way to add styling to a part of a text (\<span> tag does not provide visual change by itself)

## List Tags

**\<ul>\</ul>**
    Defines an unordered list (e.g., bullet points)

**\<ol>\</ol>**
    Defines an ordered list (e.g., numbered)

**\<li>\</li>**
    Inserts a list item

## Links

**\<a href="http://www.website.com">Click\</a>**
    Defines a hyperlink to a URL (Uniform Resource Locator)

**\<a href="mailto:test@test.com">Send Mail\</a>**
    Creates a hyperlink to an email address

## CSS Basics

Cascading StyleSheets (CSS) allow us to control the style & layout of our web pages.

CSS rules can be added to the **<head> section** of the HTML document:

```
<head>
     <style>
          h1 {
               color: blue;
          }
     </style>
</head>
```

It is good practice to reference CSS rules from an **external file**:

```
<head>
     <link rel="stylesheet"
          type="text/css"
               href="style.css">
</head>
```

We can also add CSS directly to the definition of an HTML element (**inline style definition**):

```
<p>
     I am building my <span
     style="color:red">first</span>
     website.
</p>
```

## CSS Rules

A CSS rule consists of a selector (here "p") and a declaration block (indented):

```
p {
     color: green;
     font-size: 15px;
}
```

The above rule sets the color to green and font size to 15px for all paragraphs in the document.

## CSS Selectors

CSS offers different selector types for rich styling.

The **ID Selector** selects a *unique element* in the document:

```
#some-identifier {
     color: green;
}
```

The **Class Selector** selects all elements that belong to a class:

```
.some-class {
     color: green;
}
```

We can select all elements of a **specific type** (e.g., paragraphs) **that also belong to a class**:

```
p.some-class {
     color: green;
}
```

The **Descendant Selector** selects all elements within another element, e.g., all paragraphs within a div:

```
div p {
     color: green;
}
```

## JavaScript Basics

JavaScript (JS) is a high-level programming language which adds dynamic behavior to websites.

It is common to add JS code at the bottom of a web page, just before the closing <body> tag:

```
<body>
…
     <script>
          var result = 5 + 3;
          alert("5 + 3 is " + result);
     </script>
</body>
```

Similarly to CSS, we can load JS code from an external file:

```
<script src="path/to/my/javascript/file.js"></script>
```

## jQuery

jQuery is a free, open-source and widely-used JavaScript library which provides an easier and more powerful way to write JavaScript code.