HTML

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What is HTML?

- ***HTML*** stands for ***Hypertext Markup Language***
- A computer ***language*** understood by Web browsers to format Webpages
- We describe the format of the Webpage by ***marking it up*** with special symbols we refer to as tags, e.g., the following **tags** format the text as bold:
- ****This text is bold****

What is HTML?

- Page format is written in ***plain text*** as opposed to some proprietary binary format

- Some text can be formatted to do some action and is referred to as ***hypertext*** to distinguish it from text that does not do any action

Creating an HTML Webpage

- Creating an HTML Webpage is as easy as creating a text file
- From your favorite text editor, create a new file and save it with the .html extension
- Often HTML Webpages are referred to as HTML Documents
- Here's a simple HTML document in file ***hello.html***:
- `Hello World!`
- Open the same file hello.html with a browser

The document type

- The **DOCTYPE** declares the type of the document as html. Helps browsers making sure they open the right type of document

```
<!DOCTYPE html>
<html>
 <head>
  <title>This is the Page Title</title>
  <link href="style.css" rel="stylesheet"/>
 </head>
 <body>
  Hello World!
 </body>
</html>
```

HTML Comments

- Comments are short pieces of text developers add to document code
- Help developers remember what thinking when they wrote the code
- Comments are ignored by Web browsers since they only mean something to the developer

```
<!-- This is a short one line comment -->
<!-- This is a longer
     two line comment -->
Hello World!
```

The body tag

- The **body** tag contains the main content of a Webpage and it's where we'll be spending most of our time

```
<!DOCTYPE html>
<html>
 <head>
  <title>This is the Page Title</title>
  <link href="http://somewhere.in.europe/style.css" rel="stylesheet"/>
 </head>
 <body>
  Hello World!
 </body>
</html>
```

The structure of HTML documents

- HTML Documents have the following structure. Rewrite hello.html so that the content is in the body tag

```
<!DOCTYPE html>
<html>
 <head>
  <title>This is the Page Title</title>
  <link href="style.css" rel="stylesheet"/>
 </head>
 <body>
  Hello World!
 </body>
</html>
```

The HTML root tag

- HTML Documents are **XML (eXtensible Markup Language)** documents with root tag html

```
<!DOCTYPE html>
<html>
 <head>
  <title>This is the Page Title</title>
  <link href="style.css" rel="stylesheet"/>
 </head>
 <body>
  Hello World!
 </body>
</html>
```

The head tag

- The head tag configures meta information about the document such as the author, document title, scripts, styling, etc

```
<!DOCTYPE html>
<html>
 <head>
  <title>This is the Page Title</title>
  <link href="style.css" rel="stylesheet"/>
 </head>
 <body>
  Hello World!
 </body>
</html>
```

White spaces are ignored

- We use white spaces to structure documents visually.
  Browsers only respect single spaces; tabs and newlines are ignored

```
<body> <!-- we'll stop using body since it's implied -->
    Hello World!

    Consider this paragraph of text. It's separated visually
    from the text above by a new line character that adds
    vertical spacing.

    Also these paragraphs are indented from the left
    margin with tabs. Tabs and newlines are ignored so
    this whole content will render as a single paragraph.
</body>
```

DOM

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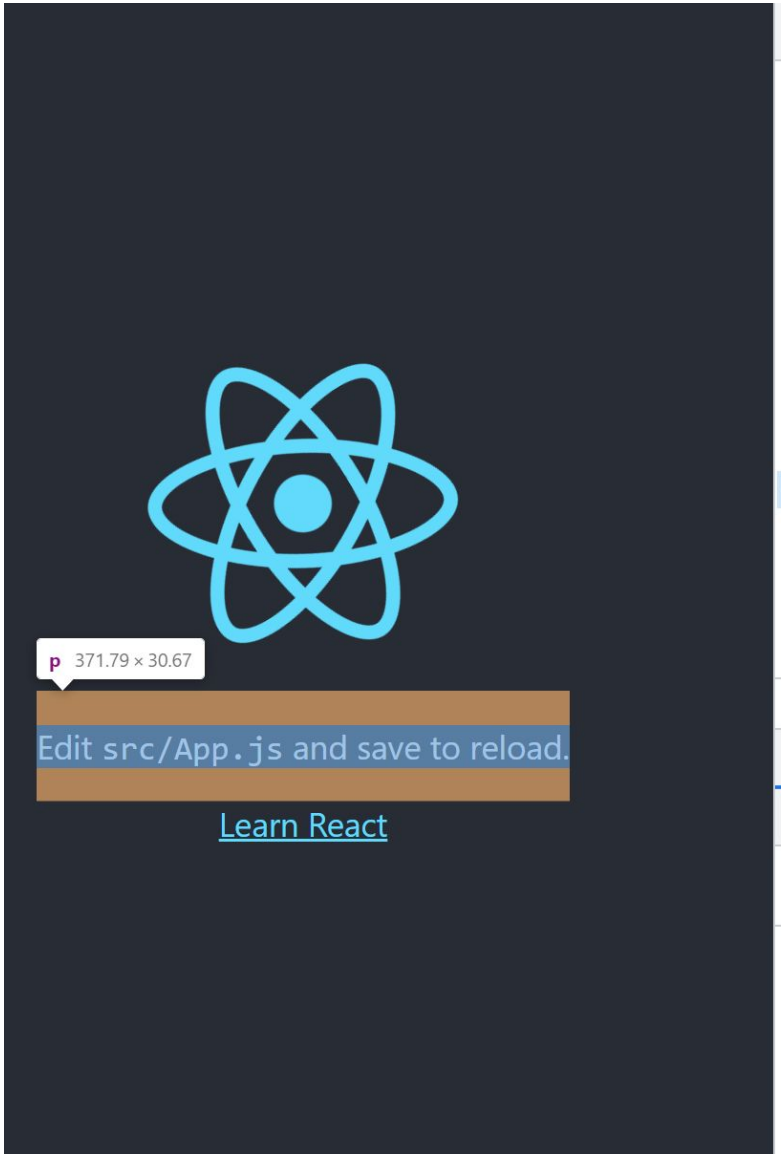
Document Object Model (DOM)

- The **DOM** is a tree like data structure browsers use to represent and render Websites
- A browser parses an **HTML** document and creates an equivalent **DOM** instance
- **HTML** controls the DOM's content and structure
- **CSS** controls the DOM's styling, look and feel
- **JavaScript** can programmatically add, remove, modify the DOM based on algorithms/events



The **DOM** is a hierarchical tree data structure maintained by the browser that represents the current document render on screen

HTML, **CSS** and **JavaScript** control the **DOM** providing content, layout, styling and logic

Example DOM

- Consider the following HTML

```
<body>
<h1>Read about the DOM</h1>
<a href="shorturl.at/bpsF6">
    DOM on MDN
</a>
</body>
```