

# Theory: DOM

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Ever wondered how web pages are rendered? Have you thought about how the browser works during site loading and what it does with the source code? It's good to be curious, and it's useful to have at least a general idea of how this works. Let's try to figure it out together!

## §1. Briefly about DOM

For a starter, it's a good idea to understand how a browser renders web pages.

The browser sends a request to the server, in response it receives the HTML source code and tries to parse it. Then, in the process of analyzing the HTML code, the browser creates a **DOM tree** in the computer's memory and uses it to further render the web page.

**DOM (Document Object Model)** is the representation of an HTML document as a tree structure that various programs can work with.

To understand what the DOM structure looks like, we will take a simple document:

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>DOM</title>
5    </head>
6    <body>
7      <h1>What is DOM?</h1>
8      <p>DOM is...</p>
9    </body>
10 </html>
```

It can be represented as the following DOM tree:

Each tree **node**, including the root, is an HTML document element. It has zero or more **children** nodes (nested elements). A node that does not have children is called a **leaf**. These leaves can be text strings, images, videos and so on.

## §2. Nodes

Everything in HTML is part of the DOM, including the `<!DOCTYPE...>` directive and comments, even though they do not appear in the browser. Even the entire document that represents a `document` object is technically a DOM node. The DOM is the HTML page interface and the first step is rendering it in the browser. We can interact with DOM nodes using programming languages. In the following topics, we will learn how to get the elements you need, and add classes and styles.

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