

Introduction to the Document Object Model (DOM)

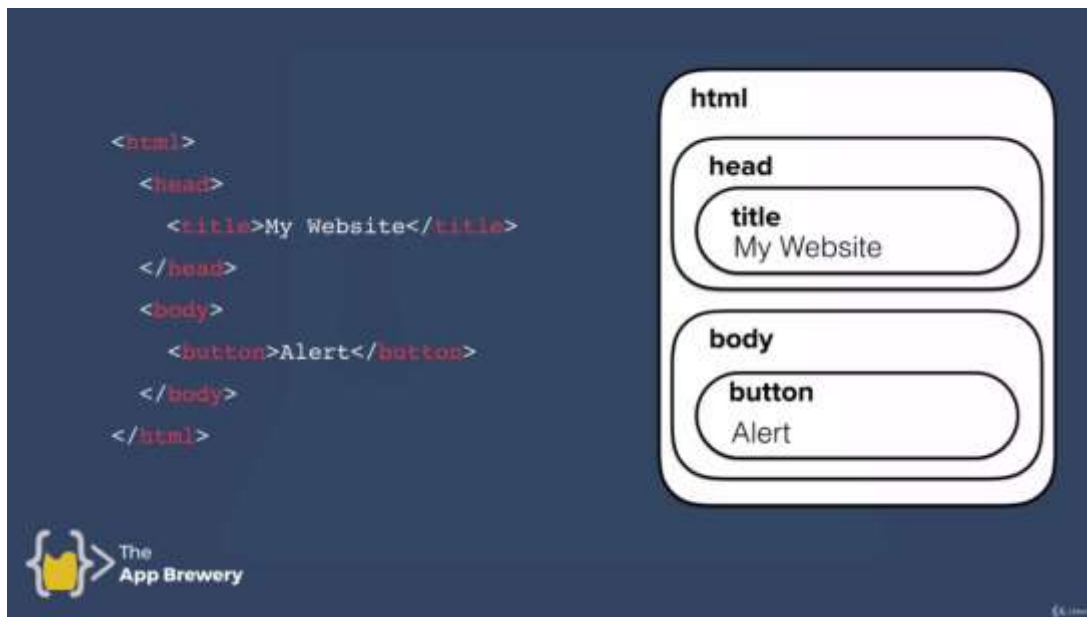
Add HTML Tree Generator to extension

<https://chrome.google.com/webstore/detail/html-tree-generator/dlbbmhhaadfnnbndnjaliilhdakfmiffeg/related>

DOM: Dominating the DOM to add functionality to HTML elements.

When user open a website we are waiting and want the user to press button and then change layout. Same when there are many users. Solution of this problem is impossible but DOM solves this.

The Document Object Model (DOM) is **a programming API for HTML and XML documents**. It defines the logical structure of documents and the way a document is accessed and manipulated.



The task of converting html file to JS is done when loading the web-page.

Tree Structure:

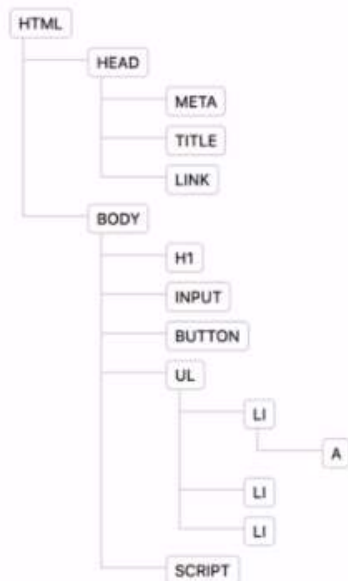
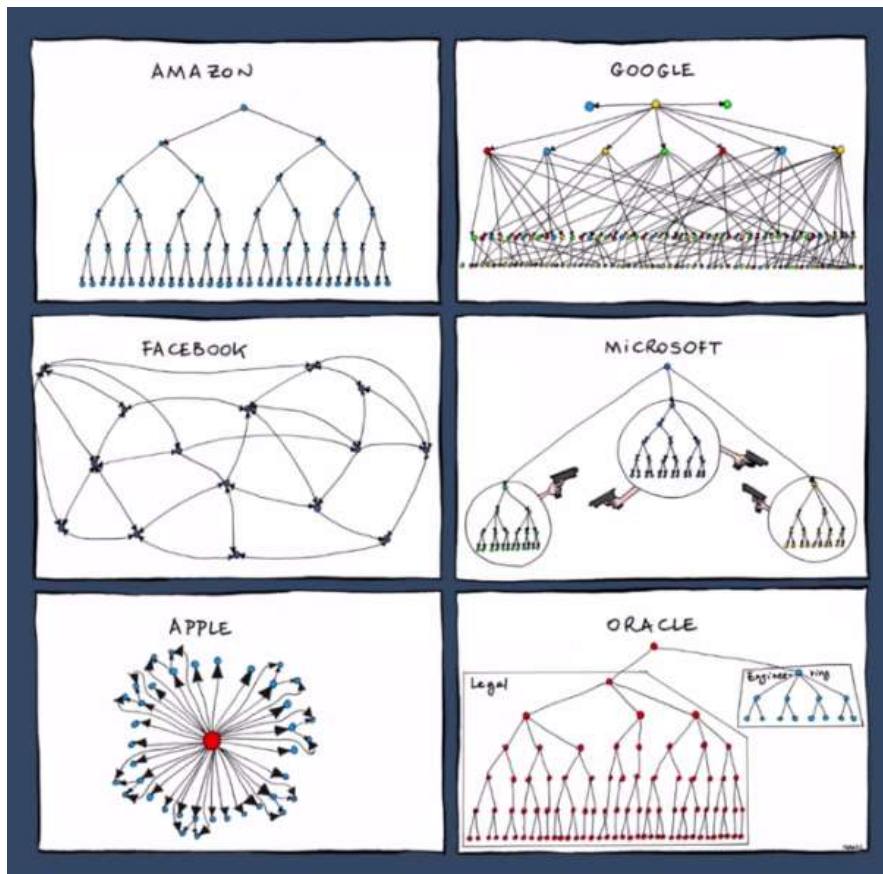


All the html elements are converted into object as shown by tree diagram.

Structure of organization



It is divided into bosses and supportners.



HTML Tree Generator

Node Details

Tag Name: **A**

Node ID:


of Children: **0**

[Brought to you by Joel Sauppe](#)

Above structure is of below code.

Object document has properties and methods.

Method associated with an object is **car.drive()**;




Properties

- `innerHTML`
- `style`
- `firstChild`

Methods

- `click()`
- `appendChild()`
- `setAttribute()`



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Properties

- `Colour`
- `Number of seats`
- `Number of Doors`

Methods

- `Brake()`
- `Drive()`
- `Park()`



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Code:

Index3.html:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <title>My Website</title>
    <link rel="stylesheet" href="css/styles3.css">
  </head>
  <body>
    <h1>Hello</h1>

    <input type="checkbox">

    <button style=":active: color:red;" >Click Me</button>
    <!-- Add list -->
    <ul>
      <li class="list">
        <a href="http://www.google.com">Google</a>
      </li>
      <li class="list">Second</li>
      <li class="list">Third</li>
    </ul>

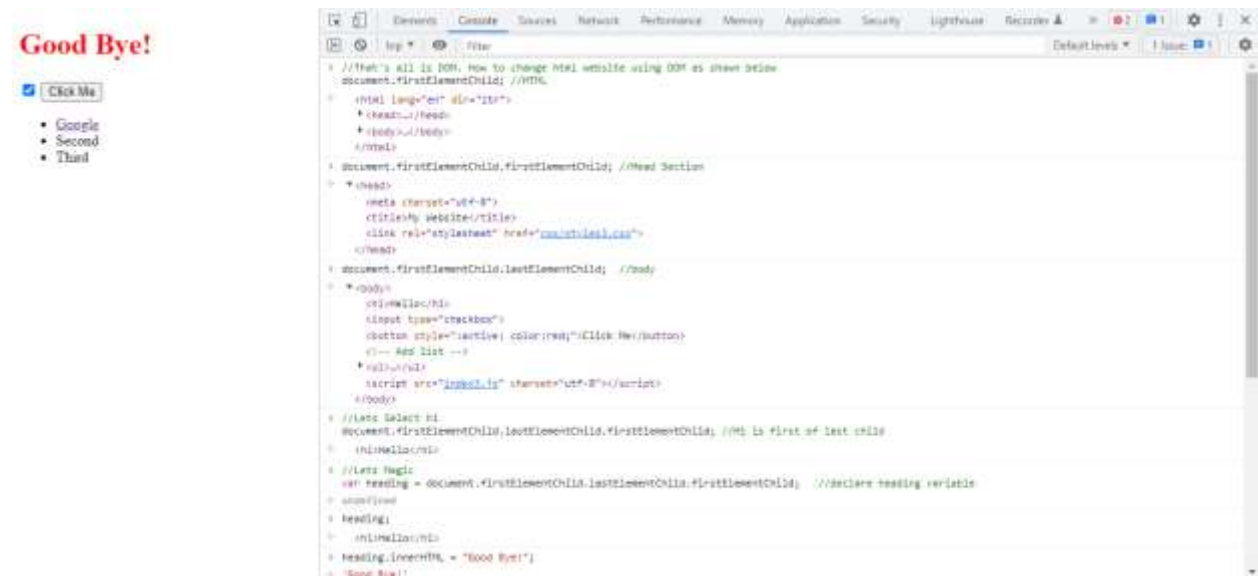
    <script src="index3.js" charset="utf-8"></script>
  </body>
</html>
```

Styles3.css:

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

Index3.js:

```
//document.querySelector("h1").innerHTML = "Good Bye!"; //Current h1 ia Hello but I'm  
change it with Good Bye
```



Good Bye!

☒ Click Me

- [Google](#)
- [Second](#)
- [Third](#)

```

> //That's all is DOM. How to change html website using DOM as shown below
document.firstChild; //HTML
<
  <html lang="en" dir="ltr">
    ▶ <head>...</head>
    ▶ <body>...</body>
  </html>

> document.firstChild.firstChild; //Head Section
<
  ▼ <head>
    <meta charset="utf-8">
    <title>My Website</title>
    <link rel="stylesheet" href="css/styles3.css">
  </head>

> document.firstChild.lastElementChild; //body
<
  ▼ <body>
    <h1>Hello</h1>
    <input type="checkbox">
    <button style=":active: color:red;">Click Me</button>
    <!-- Add list -->
    ▶ <ul>...</ul>
    <script src="index3.js" charset="utf-8"></script>
  </body>

> //Lets Select h1
document.firstChild.lastElementChild.firstChild; //H1 is first of last child
<
  <h1>Hello</h1>

> //Lets Magic
var heading = document.firstChild.lastElementChild.firstChild; //declare heading variable
<
  undefined

> heading;
<
  <h1>Hello</h1>

> heading.innerHTML = "Good Bye!";
<
  'Good Bye!'

> //Let's change heading style
heading.style.color = "red";
<
  'red'

> document.querySelector("input").click(); //It is similarly as mouse click
<
  undefined

> //Challenge
//Select third list item and chane it with your name
document.firstChild.lastElementChild.lastElementChild.lastElementChild;
<
  null

> document.firstChild.lastElementChild.lastElementChild.lastElementChild;
<
  null

> document.firstChild.lastElementChild.lastElementChild.lastElementChild.innerHTML = "Muhammad Ahmad";
✖ ▶ Uncaught TypeError: Cannot set properties of null (setting 'innerHTML')
  at <anonymous>:1:89

> document.firstChild.lastElementChild.lastElementChild.lastElementChild.innerHTML = "Angela"
✖ ▶ Uncaught TypeError: Cannot set properties of null (setting 'innerHTML')
  at <anonymous>:1:89

>

```