

Lecture 12: HTML DOM

ICT1153

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Document Object Model

- DOM – Document Object Model.
- The DOM defines a standard for accessing HTML and XML documents.
- The **Document Object Model** (*DOM*) is the data representation of the objects that comprise the structure and content of a document on the web.
- It defines the logical structure of documents and the way a document is accessed and manipulated.
- In the DOM specification, the term "**document**" is used.

DOM.....

- The W3C (World Wide Web Consortium) DOM standard is separated into 3 different parts
 - Core DOM - standard model for all document types
 - XML DOM - standard model for XML documents
 - HTML DOM - standard model for HTML documents
- In the **HTML DOM**, everything is a **node**
 - The document itself is a document node
 - All HTML elements are element nodes
 - All HTML attributes are attribute nodes
 - Text inside HTML elements are text nodes
 - Comments are comment nodes

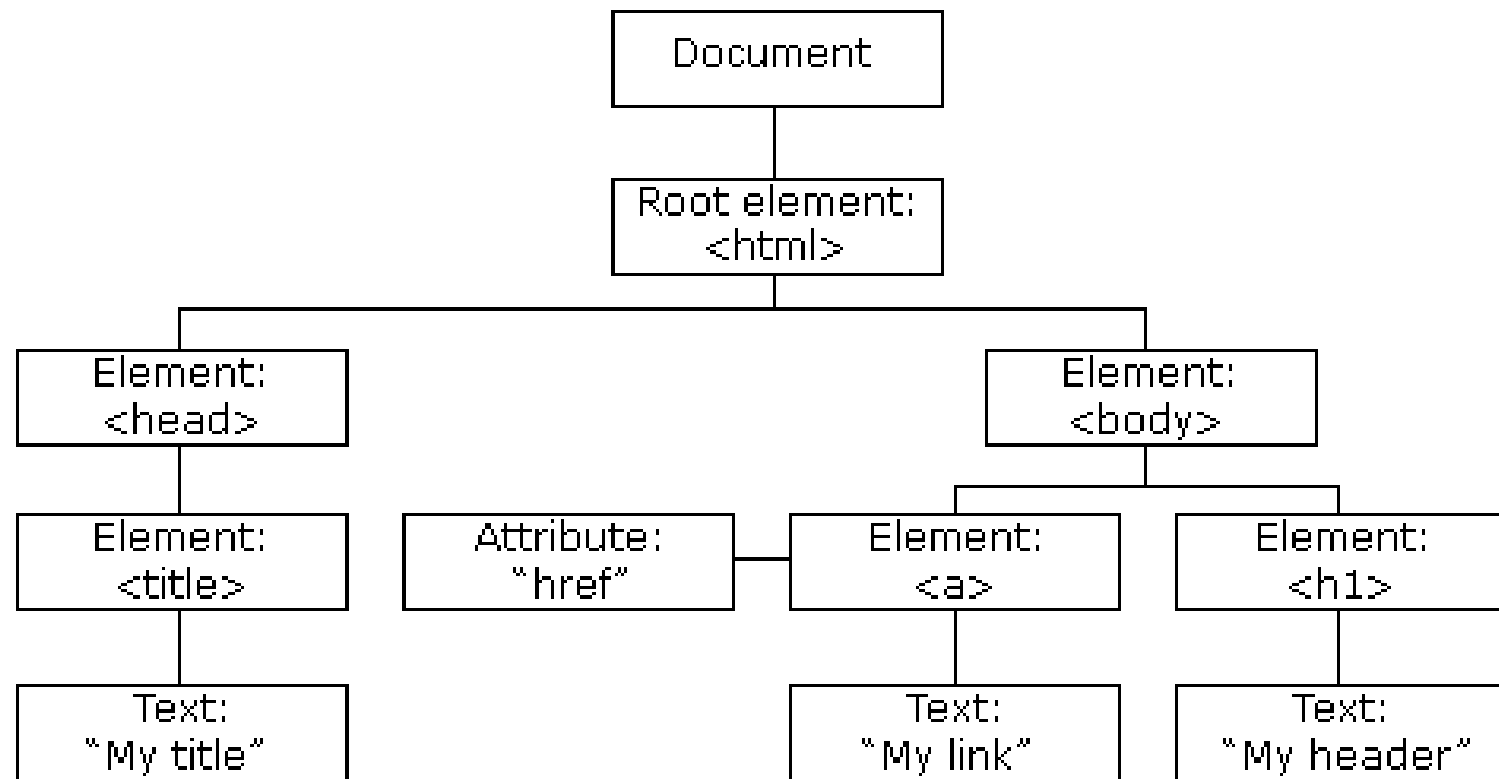
What You Can Do Using HTML DOM

- With the object model, JavaScript gets all the power it needs to create dynamic HTML:
 - Change all the HTML elements in the page
 - Change all the HTML attributes in the page
 - Change all the CSS styles in the page
 - Remove existing HTML elements and attributes
 - Add new HTML elements and attributes
 - React to all existing HTML events in the page
 - Create new HTML events in the page

How the DOM Works

- The HTML DOM model is constructed as a tree of **Objects**
- When an HTML document is loaded into a web browser, it becomes a **document object**
- The **document object is the root node** of the HTML document and the "owner" of all other nodes:
Element nodes, text nodes, attribute nodes, etc..
- The DOM provides properties and methods to access all node objects
- **Note:** The document is a part of the **Window object** and can be accessed as `window.document`

Example HTML DOM Tree

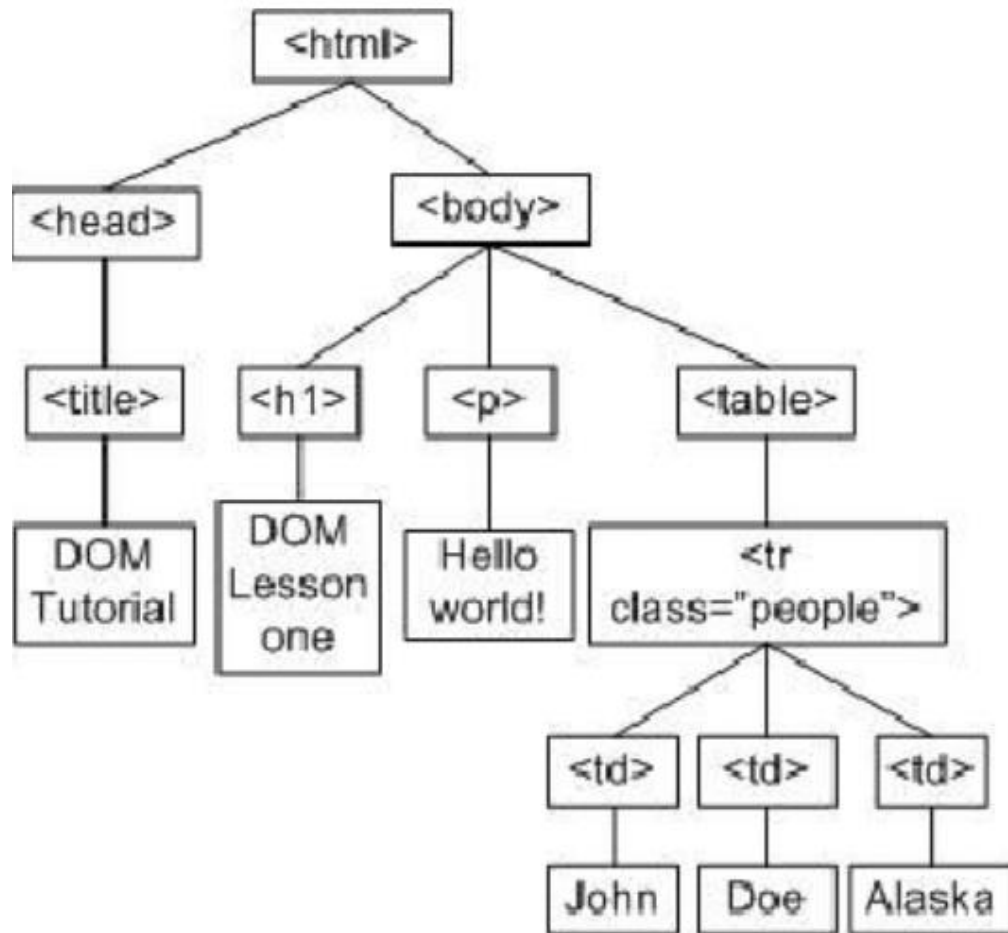


Exercise

- Draw the DOM tree using the given HTML code

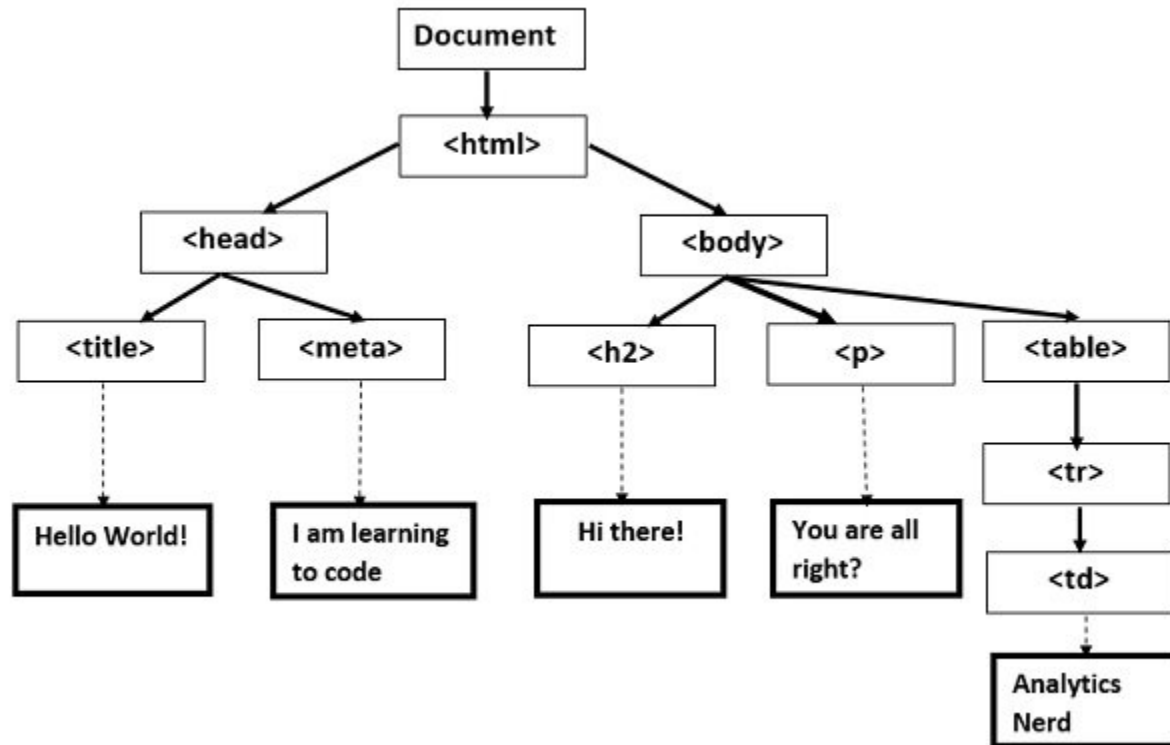
```
<html>
  <head>
    <title>DOM Tutorial</title>
  </head>
  <body>
    <h1>DOM Lesson one</h1>
    <p>Hello world!</p>
    <table>
      <tr class="people">
        <td>John</td>
        <td>Doe</td>
        <td>Alaska</td>
      </tr>
    </table>
  </body>
</html>
```

Answer



Exercise

- Write down the html code using the given DOM tree



DOM Methods and Properties

- HTML DOM methods are **actions** you can perform (on HTML Elements)
 - Ex: add or deleting an HTML element
- HTML DOM properties are **values** (of HTML Elements) that you can set or change
 - Ex: changing the content of an HTML element

Accessing Elements

- The **document** object represents the web page
- Always start with accessing the document object in order to access any element in an HTML page

Finding HTML Elements

Method	Description
<code>document.getElementById(<i>id</i>)</code>	Find an element by element id
<code>document.getElementsByTagName(<i>name</i>)</code>	Find elements by tag name
<code>document.getElementsByClassName(<i>name</i>)</code>	Find elements by class name

Changing HTML Elements

Property	Description
<code>element.innerHTML = <i>new html content</i></code>	Change the inner HTML of an element
<code>element.attribute = <i>new value</i></code>	Change the attribute value of an HTML element
<code>element.style.property = <i>new style</i></code>	Change style of an HTML element

Questions

