



Client side web programming

Introduction

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Course contents

- HTML, HTML5
- CSS, CSS2, CSS3
- Javascript, JQuery
- Responsive Web Design
 - Being prepared for multiple device types

HTML: Basic structure

```
<html>
```

```
<head>
```

```
<title>A sample HTML document</title>
```

```
</head>
```

```
<body>
```

```
<p>
```

```
This is a sample HTML document
```

```
</p>
```

```
</body>
```

```
</html>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN">  
<html>
```

```
<head>  
<title>A sample HTML document</title>  
</head>
```

```
<body>  
<h1>HTML document</h1>  
<p>  
This is a sample HTML document  
</p>  
<div>Created by JHH: 2013 </div>  
</body>  
</html>
```

HTML – element markup

link:

```
<a href="http://www.google.com">Search engine</a>
```

Start, close

element space attribute="value"

image:

```

```

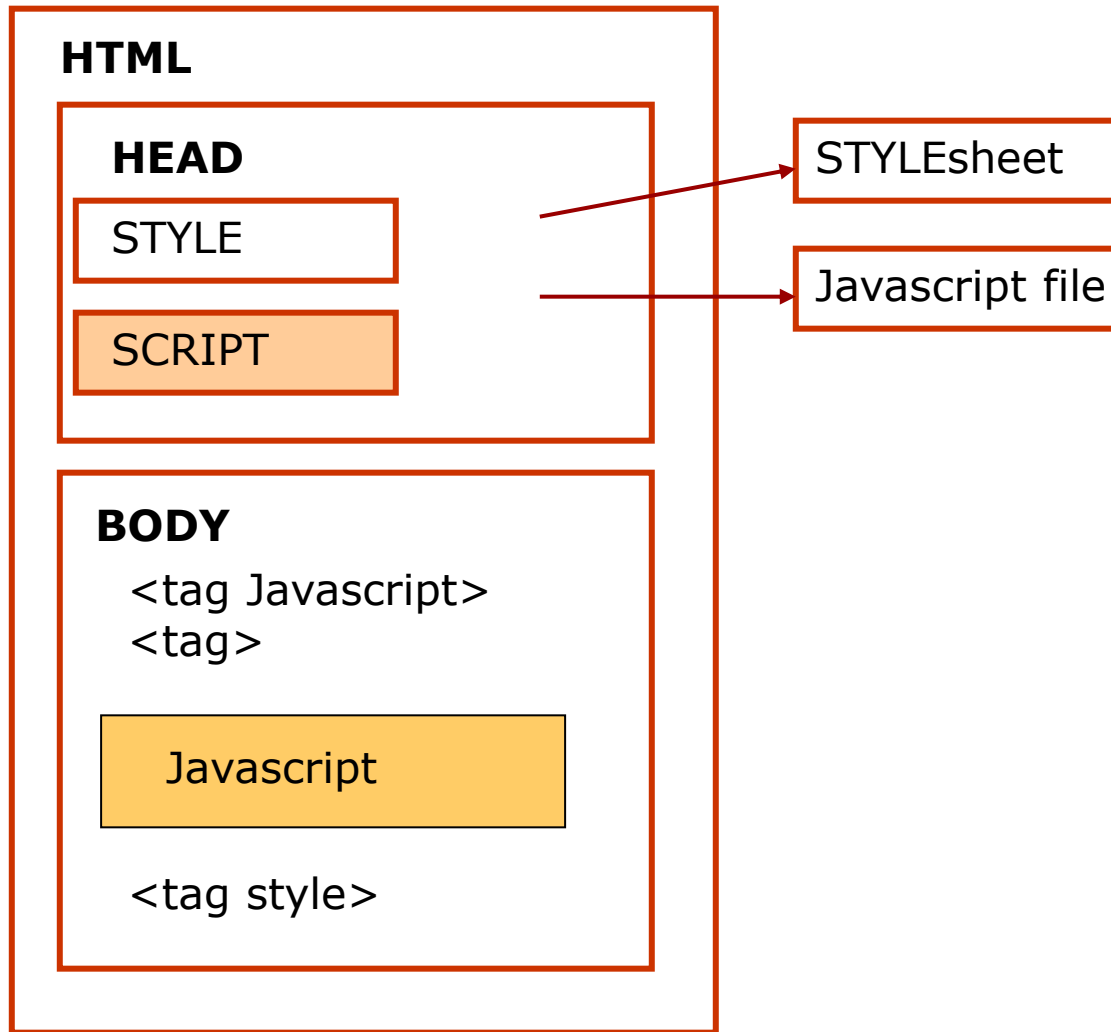
empty element

Space stripped (breaks, tabs, enter)

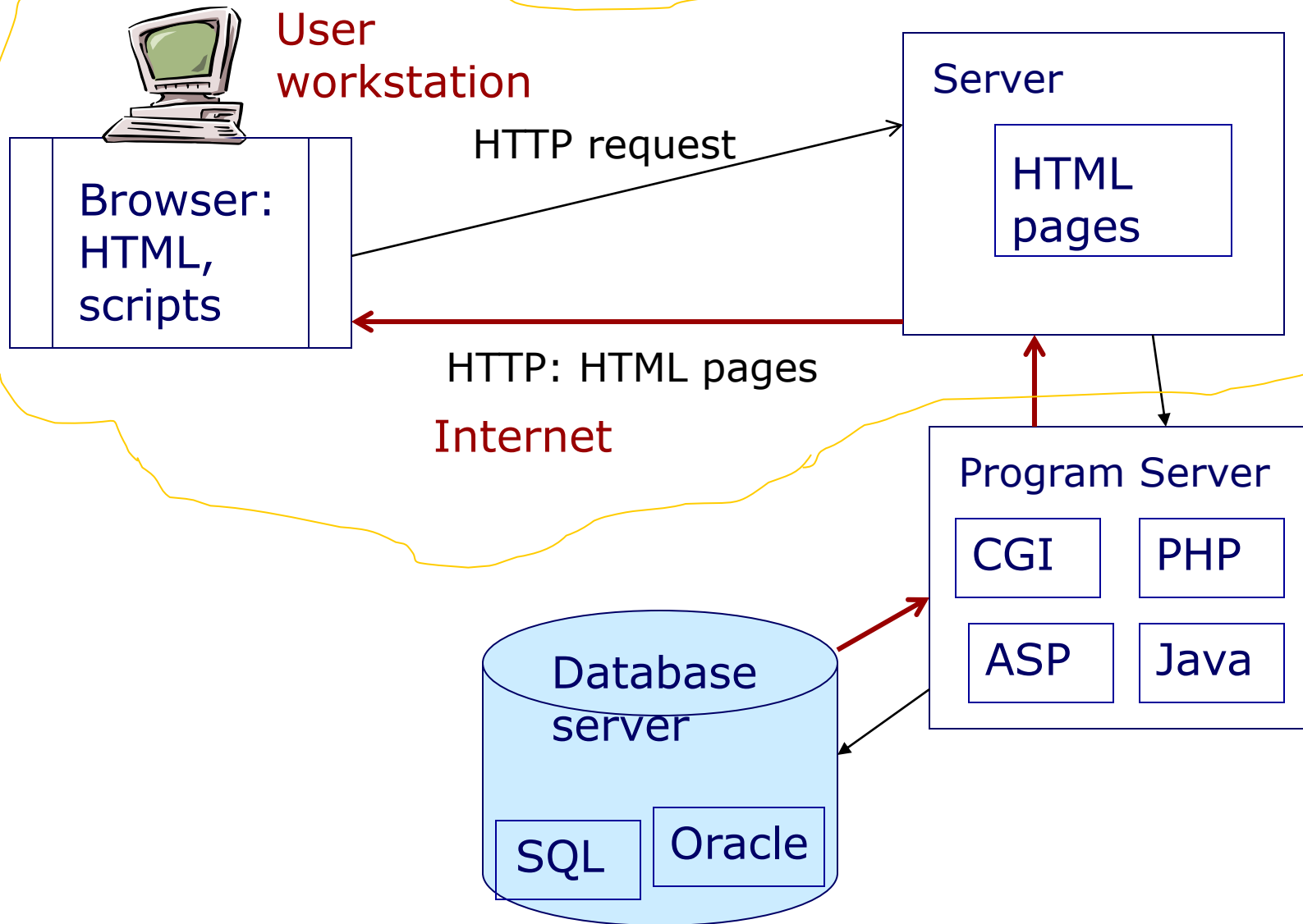
Tables: Symmetrical structure!!

```
<table>
  <tr>
    <td> cell1 </td>
    <td> cell 2 </td>
  </tr>
  <tr>
    <td>  </td>
    <td> 1 </td>
  </tr>
</table>
```

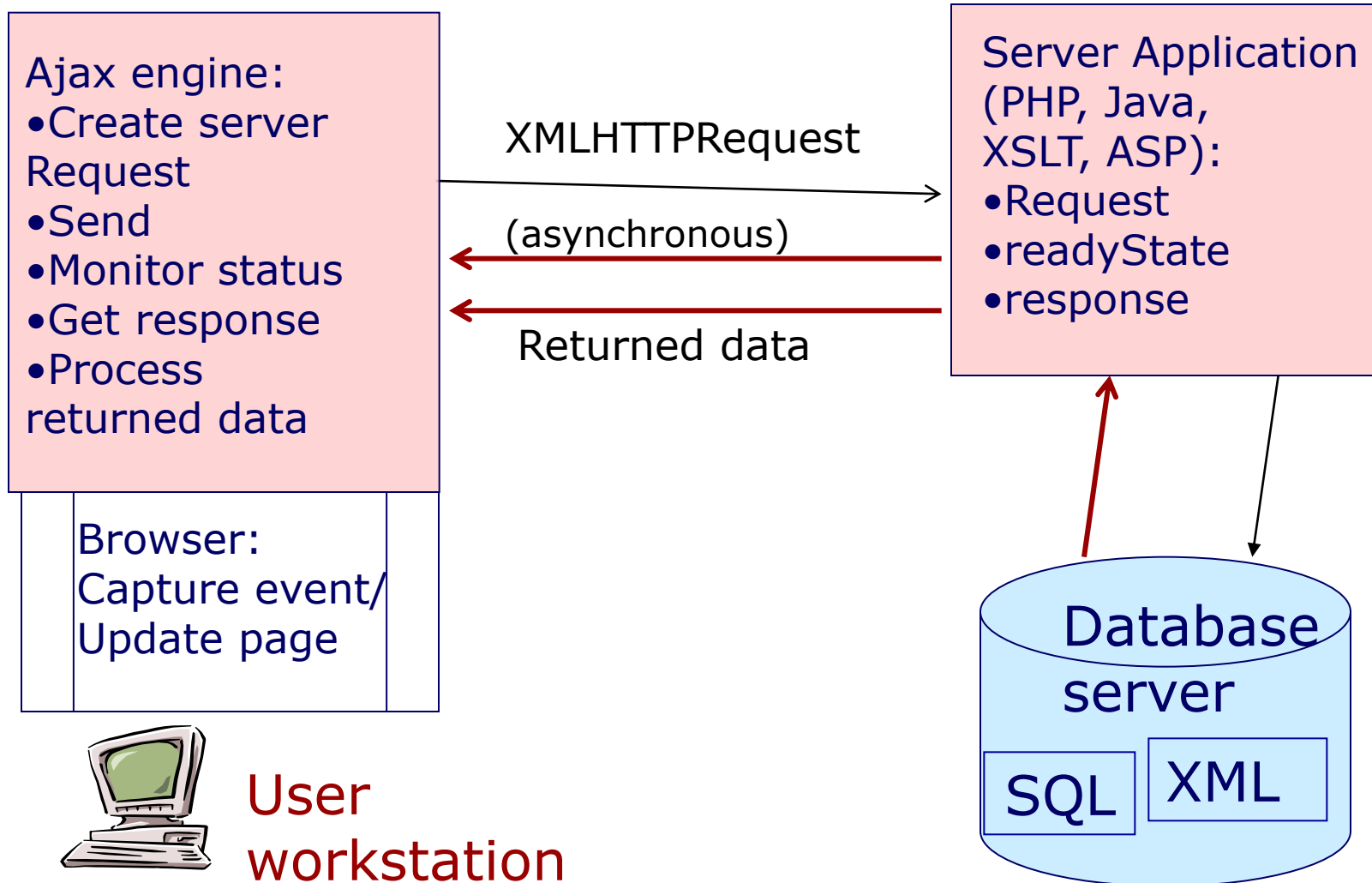
Scripts and styles on an HTML page



Page requests on the Web



Page requests: XMLHttpRequest





Javascript and document structure

Javascript

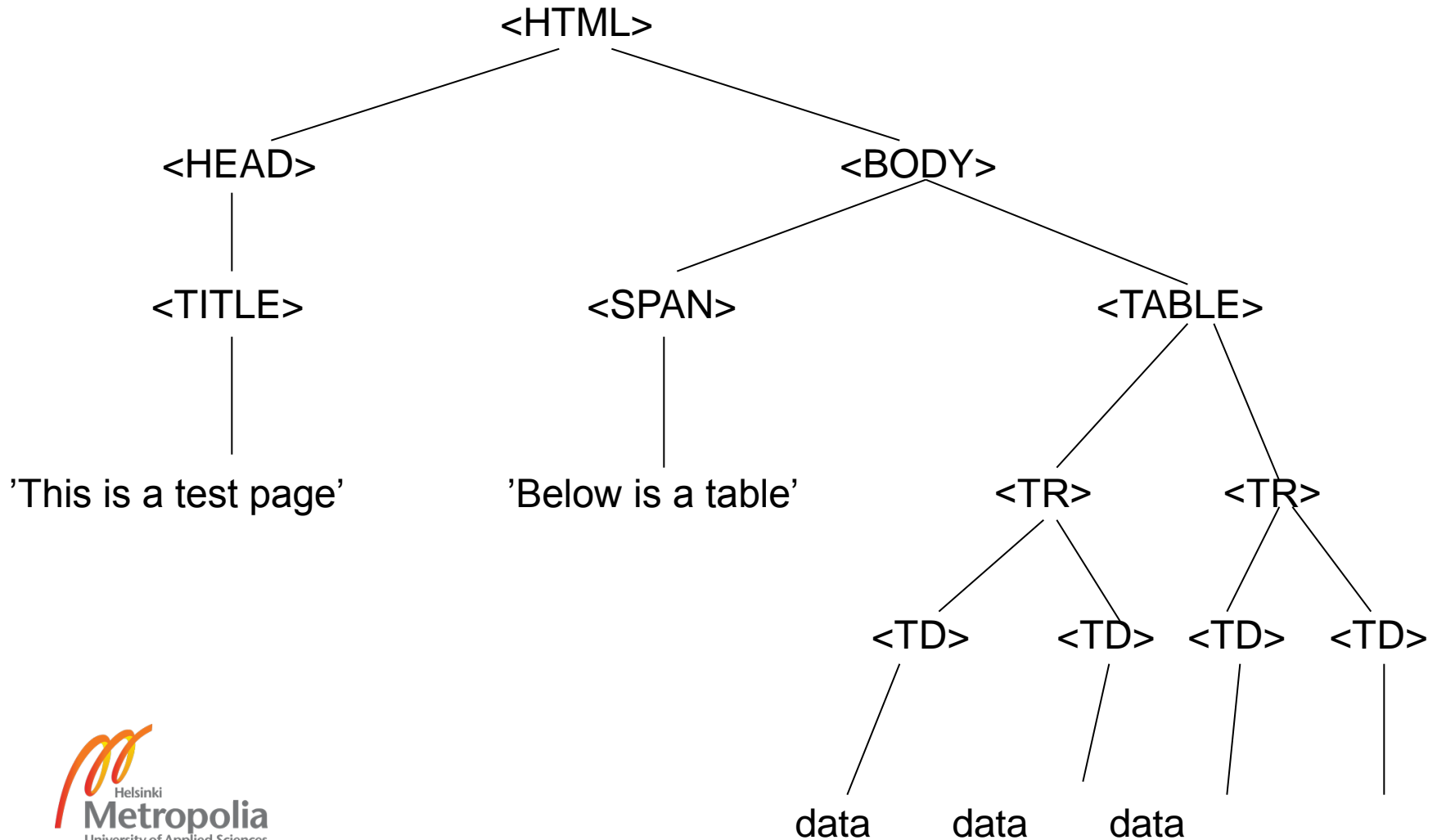
- Javascript is always downloaded from the server to the client
 - Either as a file reference
 - Or embedded in HTML
- Javascript is executed on client side.
 - Less load on server
 - Example: checks on form input (numeric fields, dates, required fields)
- Javascript understands the structure of the HTML page (document); DOM

HTML document

- Javascript can recognize the tree structure

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
  <head>
    <title>This is a test page</title>
  </head>
  <body id="trunk">
    <span>Below is a table... </span>
    <table border=1>
      <tr>
        <td>row 1 cell 1</td>
        <td>row 1 cell 2</td>
      </tr>
      <tr>
        <td>row 2 cell 1</td>
        <td>row 2 cell 2</td>
      </tr>
    </table>
  </body>
</html>
```

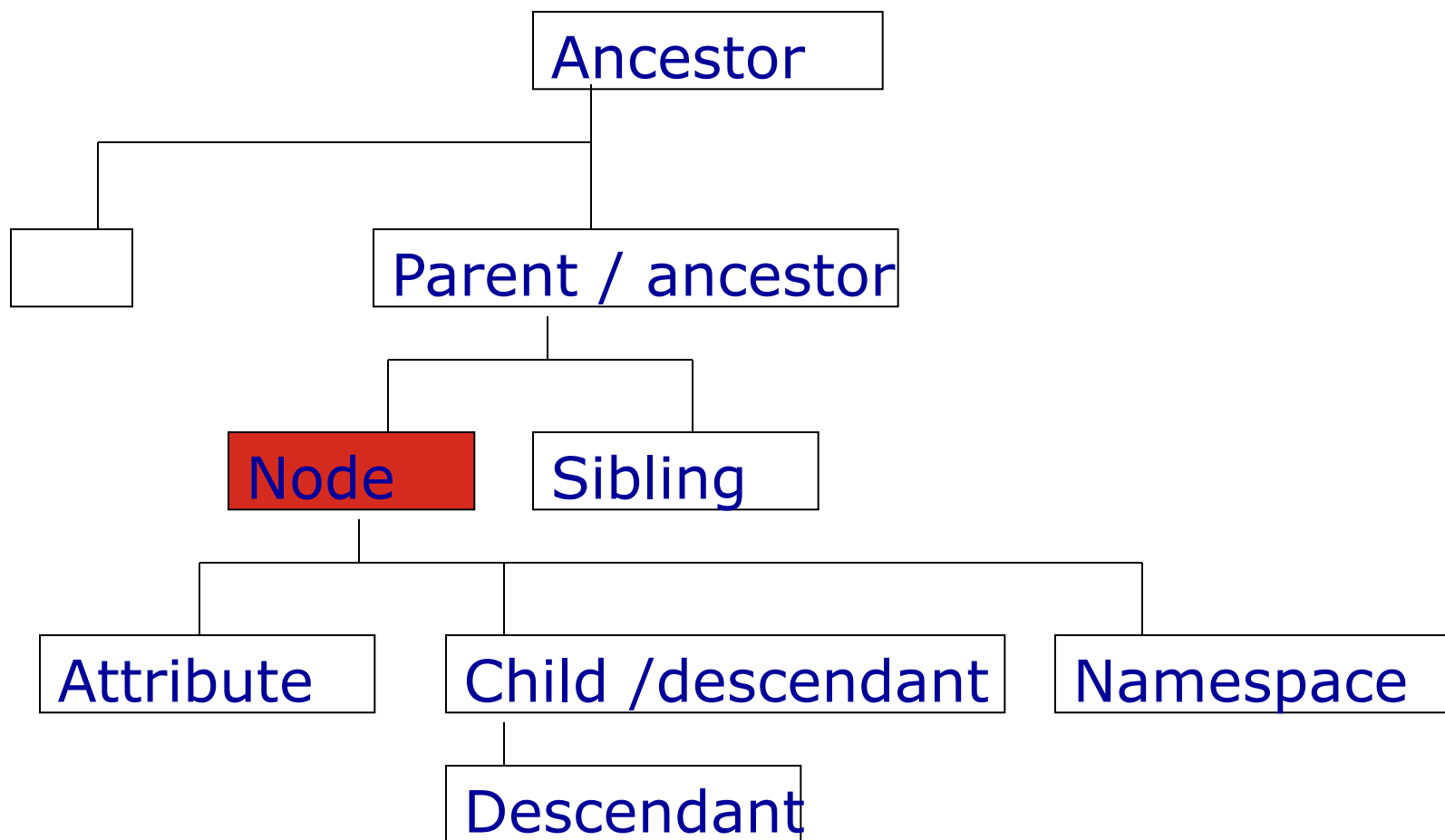
Tree of the page



Document Object Model (DOM)

- Used by many programming languages (php, Java, C#, C++, Javascript...)
- and understood by browsers (Firefox, IE, Chrome, Safari)
- XML -document is a collection of nodes that make a hierarchical tree structure
- The hierarchy is used in navigating the tree to locate information
- Inefficient use of memory: the tree structure is created in the memory
- DOM enables adding, moving, deleting and changing of nodes

Document tree



Processing of the tree

- Start with the root node (document-object)
- Element properties
 - firstChild
 - lastChild
 - nextSibling
 - parentNode
- Methods to navigate the tree in Javascript
 - getElementById(id)
 - getElementsByTagName(name)
 - getElementsByName(name)
 - getAttribute(name)