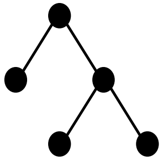
Architecture des Systèmes d’ Information

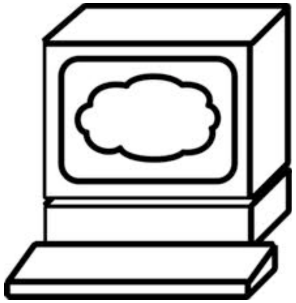
HTML DOM

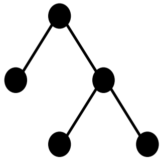


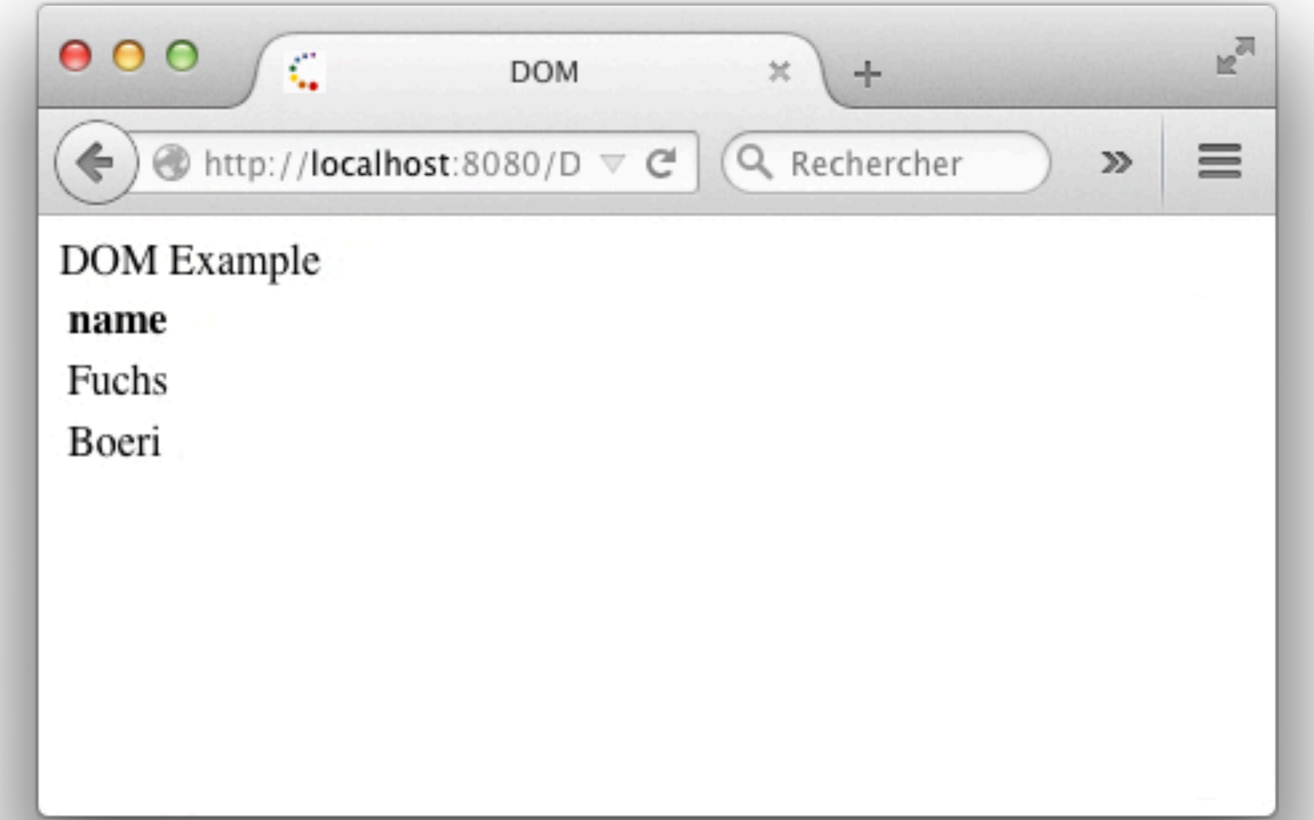
Traduction en cours

DOM : Document Object Model

- Model of how the various objects of a document are related to each other.
- Tree node and leaf.
- Each web page loaded in the browser has its own document object.
- Each object in a Web page is a DOM Node.







DOM Example

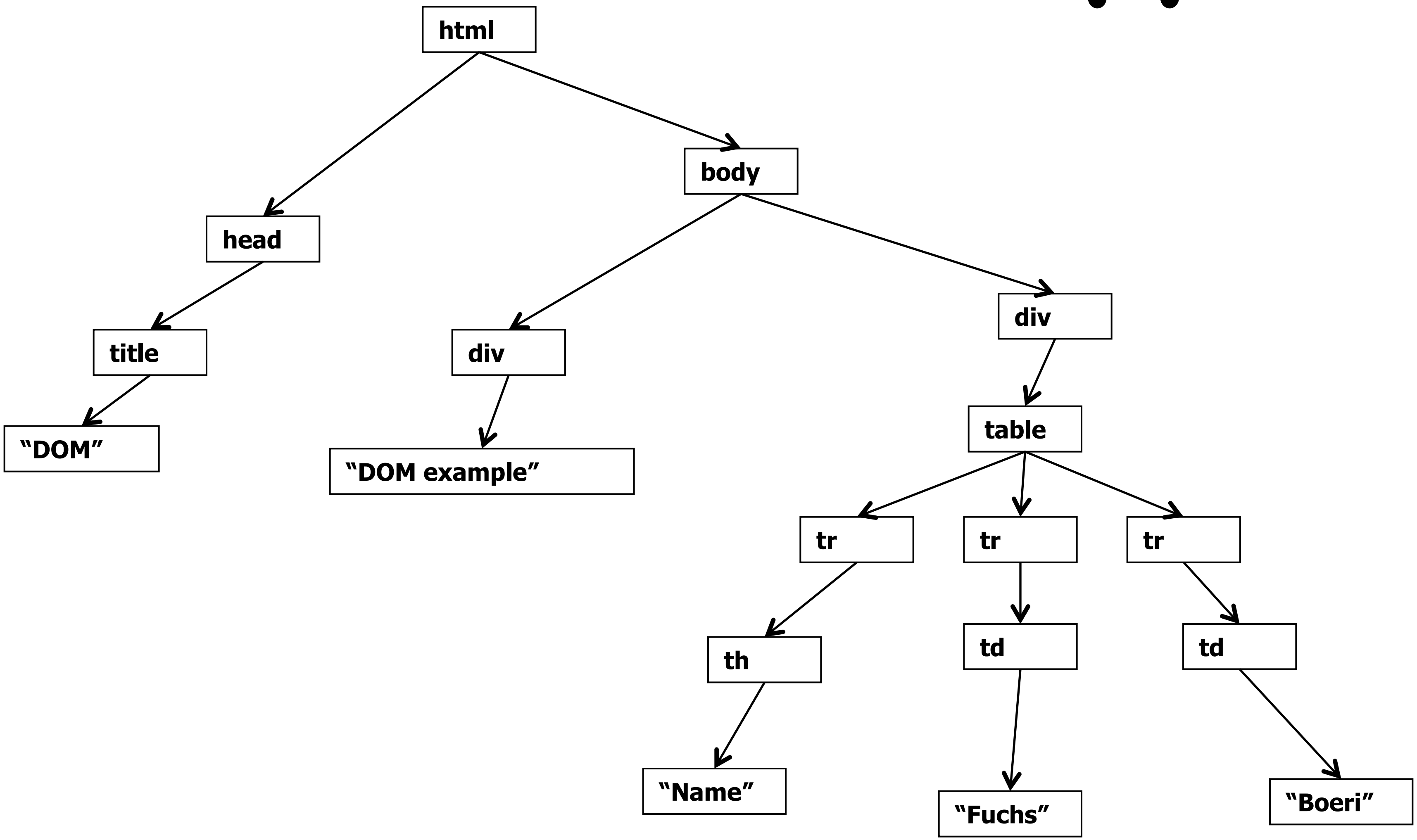
name

Fuchs

Boeri

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/
loose.dtd">

<html>
<head>
<title>DOM</title>
</head>
<body>
        <div>DOM Example</div>

        <table>
                <tr>
                        <th>name</th>
                </tr>
                <tr>
                        <td>Fuchs</td>
                </tr>
                <tr>
                        <td>Boeri</td>
                </tr>
        </table>
</body>
</html>
```

DOM Tree

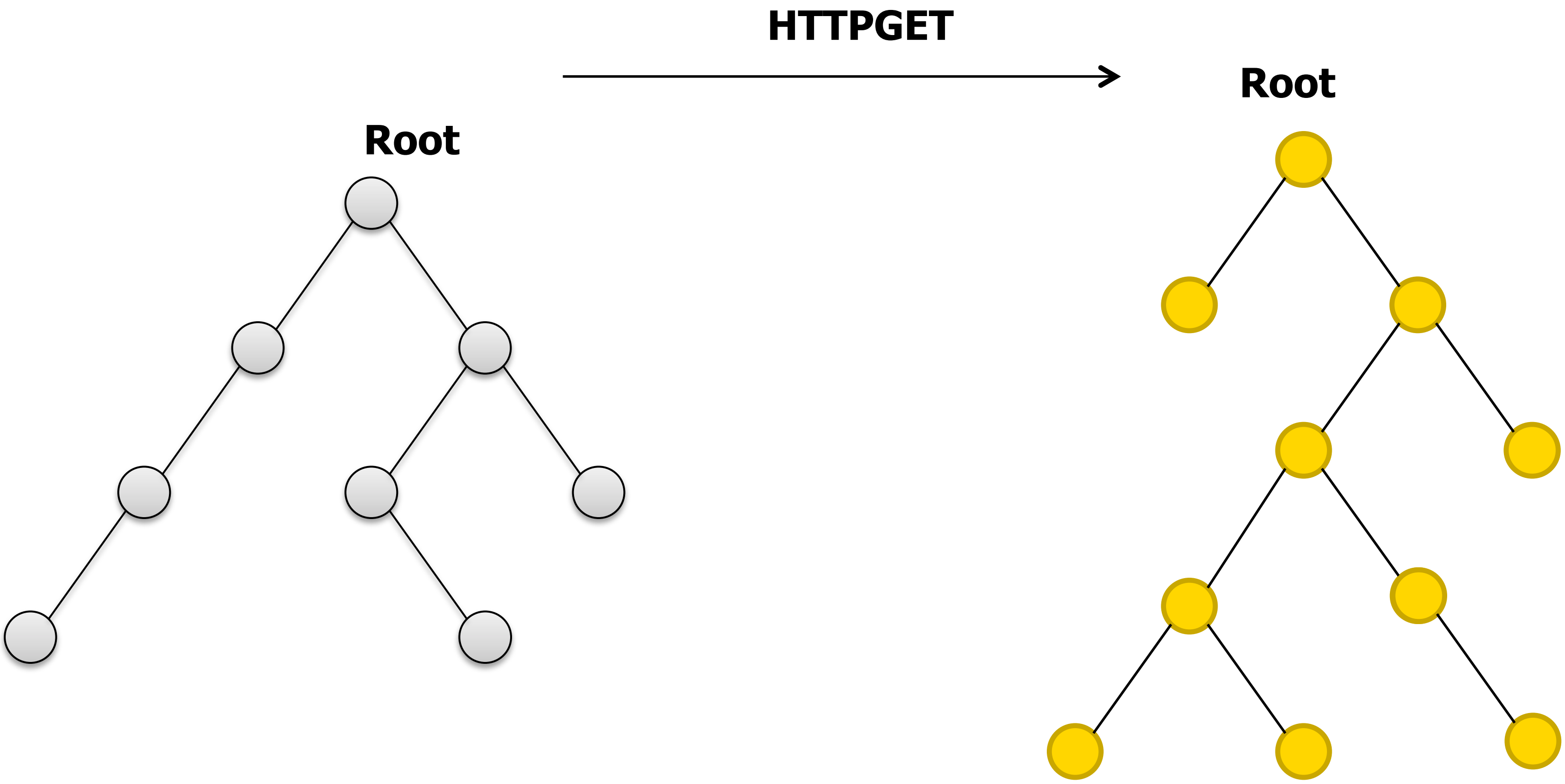


- html
  - head
    - title
      - “DOM”
  - body
    - div
      - “DOM example”
    - div
      - table
        - tr
          - th
            - “Name”
        - tr
          - td
            - “Fuchs”
        - tr
          - td
            - “Boeri”

DOM and scripting

- When the HTML file is loaded into the browser, it becomes a "Document" object
- Each node can be modified by scripting.
- Each HTML tag has a corresponding DOM object with specific properties.
- To modify any element of the HTML page scripts walthrough the tree cheking element ID.

New DOM Tree per request

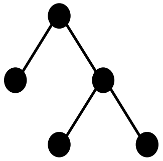


HTTPGET

Root

Root

DOM Node



- 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 node

DOM document object

- The document object is the root node of the HTML document it the entry point to all other nodes:
  - element nodes,
  - text nodes,
  - attribute nodes,
  - comment nodes.

DOM Element Object

- In the HTML DOM, the Element object represents an HTML element.
- Element objects can have child nodes of type :
  - element nodes,
  - text nodes,
  - comment nodes.
- A NodeList object represents a list of nodes.
- Elements can also have attributes.

HTML DOM Events

- HTML DOM events allow JavaScript to register different event handlers on elements in an HTML document.
- Events are normally used in combination with listener functions.
- Each element has an event handlers.

http://www.w3.org/TR/DOM-Level-2-Events/events.html

w3schools.com

DOM event : Mousse events

Event	Description	DOM
onclick	The event occurs when the user clicks on an element	2
oncontextmenu	The event occurs when the user right-clicks on an element to open a context menu	3
ondblclick	The event occurs when the user double-clicks on an element	2
onmousedown	The event occurs when the user presses a mouse button over an element	2
onmouseenter	The event occurs when the pointer is moved onto an element	2
onmouseleave	The event occurs when the pointer is moved out of an element	2
onmousemove	The event occurs when the pointer is moving while it is over an element	2
onmouseover	The event occurs when the pointer is moved onto an element, or onto one of its children	2
onmouseout	The event occurs when a user moves the mouse pointer out of an element, or out of one of its children	2
onmouseup	The event occurs when a user releases a mouse button over an element	2

W3C DOM IDL

- Appendix F: IDL Definitions
- *OMG IDL for the Level 3 Document Object Model Core definitions.*

DOM API

- DOM IDL Exemple :

```
interface DOMImplementation {

 boolean hasFeature(in DOMString feature, in DOMString version);

 // Introduced in DOM Level 2:

 DocumentType createDocumentType(in DOMString qualifiedName,  in DOMString publicId,  in DOMString systemId)

                                                  raises(DOMException);

 // Introduced in DOM Level 2:

 Document createDocument(in DOMString namespaceURI,  in DOMString qualifiedName,  in DocumentType doctype)

                                                  raises(DOMException);

};
```

http://www.w3.org/TR/DOM-Level-2-Core/core.html#i-Document

DOM IDL : Interface Node

```
interface Node {
 // NodeType

 Node insertBefore(in Node newChild, in Node refChild)  raises(DOMException);
 Node replaceChild(in Node newChild,  in Node oldChild) raises(DOMException);
 Node removeChild(in Node oldChild)  raises(DOMException);
 Node appendChild(in Node newChild)  raises(DOMException);
 boolean hasChildNodes();
 Node cloneNode(in boolean deep);
};
```

http://www.w3.org/TR/REC-DOM-Level-1/idl-definitions.html

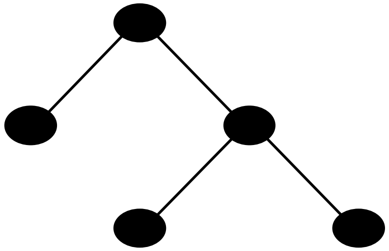
EventTarget IDL

```
// Introduced in DOM Level 2:
interface EventTarget {

  void              addEventListener(   in DOMString type,
                                        in EventListener listener,
                                        in boolean useCapture);

  void              removeEventListener(         in DOMString type,
                                        in EventListener listener,
                                        in boolean useCapture);

  boolean             dispatchEvent(in Event evt)
                                raises(EventException);
};
```

http://www.w3.org/TR/DOM-Level-2-Events/events.html

Document Object Model

- JavaScript
- WebIDL
- Object event
- Event



javascript framework : client side

- Dojo Toolkit
- jQuery
- script.aculo.us (Thomas Fuchs)

script.aculo.us
it's about the user interface, baby!

jQuery
write less, do more.

dōjō
toolkit