

Lecture 15

JavaScript DOM

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Summary of the previous lecture

- **What is JavaScript?**
- **Embedding JavaScript with HTML**
- **JavaScript conventions**
- **Variables in JavaScript**
- **JavaScript operators**
- **Input output in JavaScript**
- **JavaScript functions**
- **Conditional Statements**
- **Looping Statements**

Outline

- **Dialog boxes in JavaScript**
- **HTML Document Object Model (DOM)**

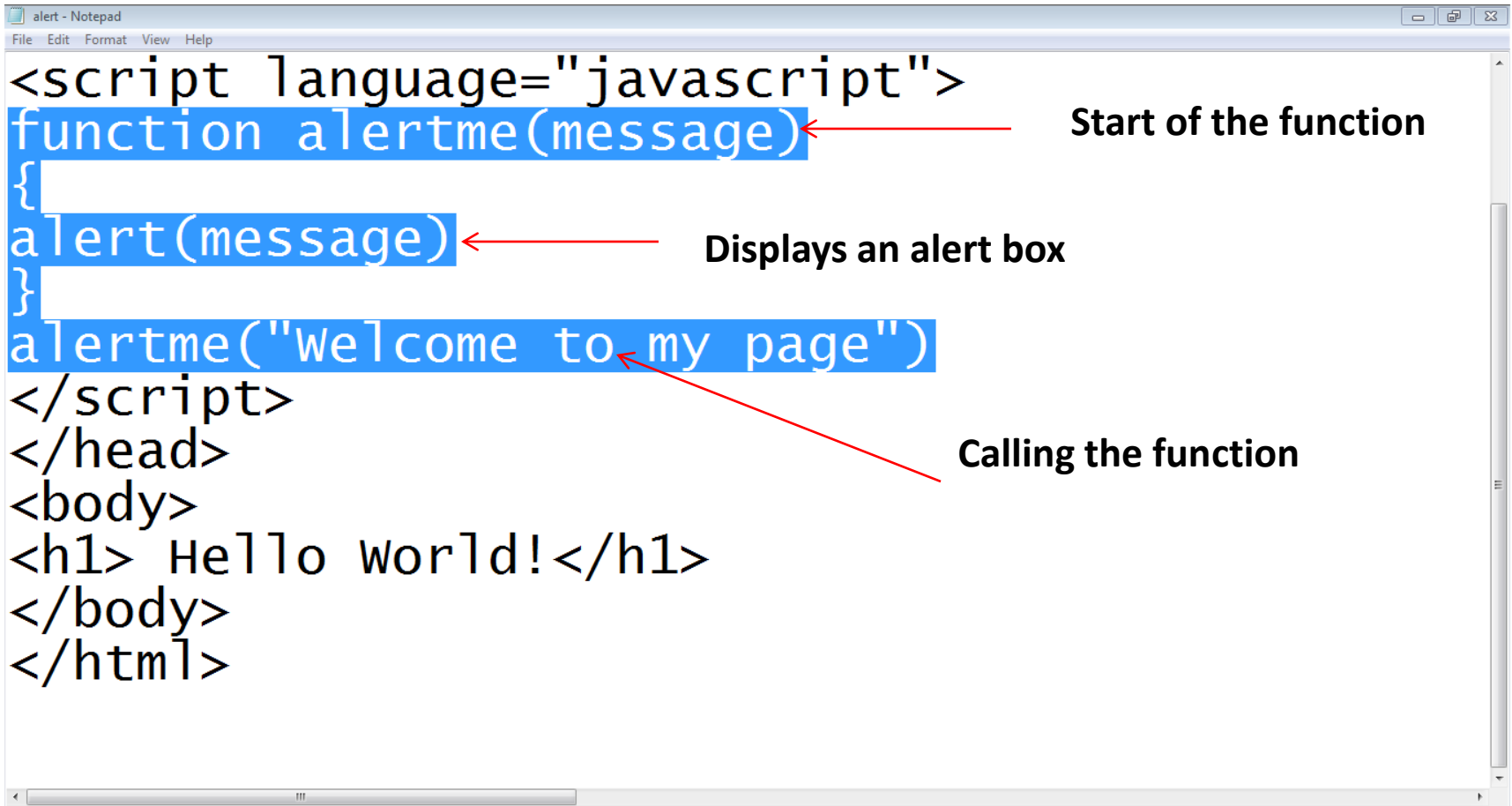
1. Dialog boxes in JavaScript

- JavaScript provides the ability to **pickup** user input or **display** small amounts of text to the user by using **dialog boxes**
- These dialog boxes **appear** as **separate windows** and their **content** depends on the information provided by the user

1.1 Alert Box

- An alert box is simply a small **message box** that **pops up** and gives the user **some information**
- An alert dialog box is mostly **used** to give a **warning message** to the users
- When an alert box **pops up**, the user will have to **click "OK"** to proceed
- Syntax:
 - **alert("message")**

1.1 Alert Box...



```
alert - Notepad
File Edit Format View Help
<script language="javascript">
function alertme(message)
{
alert(message)
}
alertme("welcome to my page")
</script>
</head>
<body>
<h1> Hello world!</h1>
</body>
</html>
```

Start of the function

Displays an alert box

Calling the function

1.2 Prompt box

- A **prompt box** is often used if you want the user to **input** a value before entering a page
- When a prompt box pops up, the user will have to click either **"OK"** or **"Cancel"** to proceed after entering an input value
- If the user clicks **"OK"** the box returns the **input value**
- If the user clicks **"Cancel"** the box **returns null**

1.2 Prompt box...

```
prompt - Notepad
File Edit Format View Help
<html>
<head>
<title>Prompt box</title>
<script language="javascript">
function promptMe() ← Start of the function
{
var name=prompt("please Enter Your Name",
"Name"); ← Prompt box
document.write("Hello Mr. " + name)
}
promptMe() ← Calling the function
</script>
</head>
```


1.3 Confirm box

- A **confirm box** is often used if you want the user to **verify** or **accept** something
- When a confirm box **pops up**, the user will have to click either **"OK"** or **"Cancel"** to proceed
- If the user clicks **"OK"**, the box returns **true**
- If the user clicks **"Cancel"**, the box returns **false**

1.3 Confirm box

```
confirm - Notepad
File Edit Format View Help
<head>
<title>Confirm Box</title>
<script language="javascript">
function conName()
{
var name=prompt("Your Name please!")
if(confirm("Write on the webpage ?"))
document.write("Welcome Mr." + name)
else
document.write("Welcome MR. Anonymous")
}
conName()
</script>
```

User input

confirmation

Not confirmed

2. Document Object Model (DOM)

- Once html element are **rendered** (painted) in the browser window, browser **can not** recognize them
- To create interactive web pages it is **vital** that the browser continues to **recognize** HTML elements
- **JavaScript enabled** browsers do this because they **recognize and uses** DOM

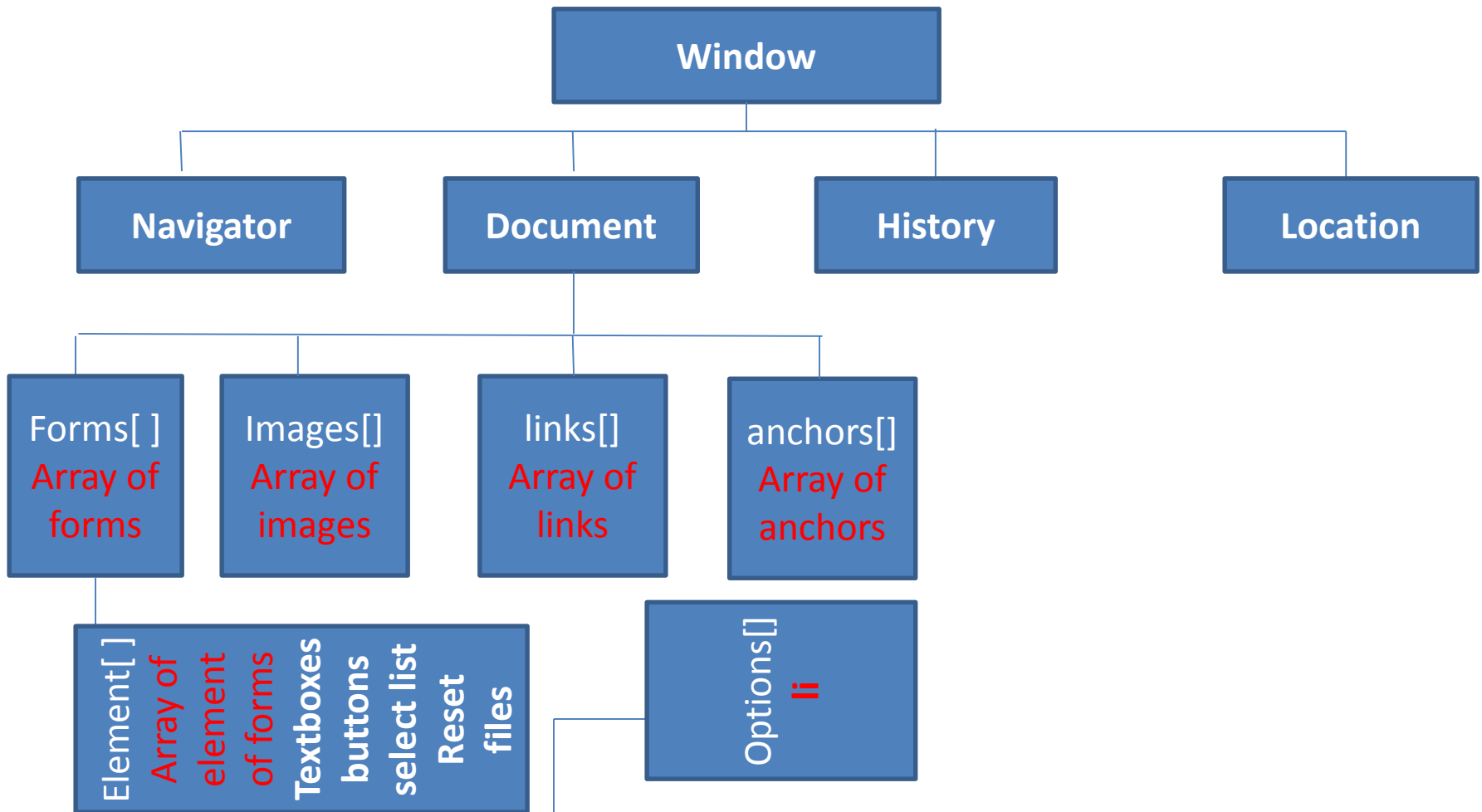
2. Document Object Model (DOM)...

- The **HTML DOM** defines a standard set of objects for HTML, and a standard way to **access and manipulate** HTML documents
- **All HTML elements**, along with their containing text and attributes, can be **accessed through the DOM**
 - The contents can be **modified or deleted**, and new elements can be created

2. Document Object Model (DOM)...

- The **HTML DOM** is platform and language Independent
 - It can be used by any **programming language** like Java, JavaScript, and VBScript
- The HTML DOM can be thought of as a **hierarchy** moving from the most **general** object to the **most specific**

2. Document Object Model (DOM)...



2. Document Object Model (DOM)...

- **document.forms[0].elements[0].value**
- **document.images[0].src**
- **document.links[0].href**

2.1 Retrieving HTML elements

- The **getElementById()** method is a workhorse method of the DOM
- It retrieves a **specified element** of the HTML document and returns a **reference** to it
- To retrieve an element, it must have an **unique id**
 - `document.getElementById("element-id")`

2.1 Retrieving HTML elements...

- The returned reference can be used to retrieve element **attributes**
 - `document.getElementById("element-id").attribute`
 - `document.getElementById("pic").src`
 - `document.getElementById("pic").height`

2.1 Retrieving HTML elements...

```
getElement - Notepad
File Edit Format View Help
<title>Retrieving values</title>
<script>
function getValue()
{
var a=document.getElementById("pic")
alert(a.title)
alert(a.height)
}
</script>
</head>
<body>

```

Function starts

Getting reference to pic

Accessing Attributes

Image tag

Setting id

Calling function

2.2 Retrieving the text of an element

- **innerHTML** property defines both the HTML code and the text that occurs between that element's **opening and closing**
 - **document.getElementById("element-id").innerHTML**

2.2 Retrieving the text of an element

```
inner - Notepad
File Edit Format View Help
<script>
function getText()
{
var a=document.getElementById("mypara")
alert(a.innerHTML)
}
</script>
</head>
<body>
<p id="mypara" onClick="getText()">
Hello world </p>
</body>
</html>
```

Getting reference to element

Getting text

Id of paragraph

Calling the function

Paragraph text

2.3 Getting value of attributes

- **getAttribute()** method is used to retrieve values of attributes
 - `document.getElementById("element-id").getAttribute("attribute-name")`
 - `document.getElementById("pic").getAttribute("src")`

2.3 Getting value of attributes

```
getatt - Notepad
File Edit Format View Help
<script>
function getAtt()
{
var a=document.getElementById("pic")
alert(a.getAttribute("title"))
}
</script>
</head>
<body>

</body>
</html>
```

Getting reference to element

Using getAttribute function

2.4 Setting value of attributes

- **setAttribute()** method is used to set values of attributes
 - `document.getElementById("element-id").setAttribute("attribute-name", "Value")`
 - `document.getElementById("pic").setAttribute("src", "abc.jpg")`

2.4 Setting value of attributes

```
setatt - Notepad
File Edit Format View Help
<script>
function setAtt()
{
var a=document.getElementById("pic")
a.setAttribute("src","bg3.jpg")
}
</script>
</head>
<body>

</body>
</html>
```

Setting Reference to element

Changing the value of attribute

Summary

- **Dialog boxes in JavaScript**
- **HTML DOM**
- **Retrieving HTML elements**
- **Setting HTML elements**

References

- **Chapter 11.** Beginning HTML, XHTML, CSS, and JavaScript, by Jon Duckett, Wiley Publishing; 2009, ISBN: 978-0-470-54070-1.
- **Chapter 3,6,** Learn JavaScript, by Chuck Easttom, Wordware Publishing; 2002, ISBN 1-55622-856-2