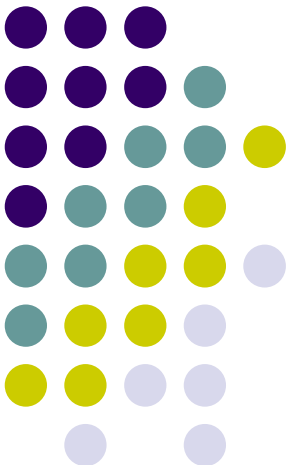
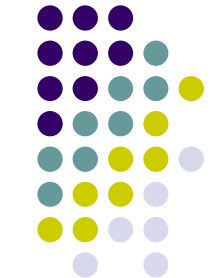
Προγραμματισμός Ιστοσελίδων: Javascript II

Πανεπιστήμιο Πελοποννήσου
Τμήμα Επιστήμης & Τεχνολογίας Τηλεπικοινωνιών

Ευάγγελος Α. Κοσμάτος



Αντικείμενα (Objects)

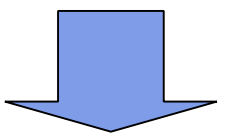


- Αντικείμενο στη Javascript είναι οτιδήποτε μπορούμε να διαχειριστούμε
- Υπάρχουν τρεις τύποι αντικειμένων
  - Εγγενή αντικείμενα
    - π.χ. String, Date, Array, Math
  - Συγκεκριμένα για μια εφαρμογή
    - π.χ. για τον Browser: Window, Document, Form
  - Αντικείμενα μου τα έχουμε δημιουργήσει εμείς
    - π.χ. MyObject
- Κάθε αντικείμενο έχει
  - Ιδιότητες (Χαρακτηριστικά)
    - συγκεκριμένες τιμές
      - objectName.propertyName
  - Μεθόδους
    - συναρτήσεις που εκτελούν κάποια διαδικασία και επιστρέφουν κάποια τιμή
      - objectName.methodName()

Αντικείμενα (Objects)

- Παράδειγμα

```
<script type="text/javascript">
  var message = "Welcome to Javascript course";
  document.write(message.length);
  document.write("<br/>");
  document.write(message.substring(7,20));
</script>
```



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to Javascrip

Αντικείμενο String

Ιδιότητες	Επεξήγηση
length	Returns the number of characters in a string

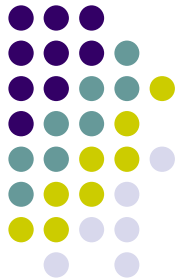
Μέθοδος	Επεξήγηση
anchor()	Returns a string as an anchor
big()	Returns a string in big text
blink()	Returns a string blinking
bold()	Returns a string in bold
charAt()	Returns the character at a specified position
charCodeAt()	Returns the Unicode of the character at a specified position
concat()	Returns two concatenated strings
fixed()	Returns a string as teletype
fontcolor()	Returns a string in a specified color
fontsize()	Returns a string in a specified size
fromCharCode()	Returns the character value of a Unicode
indexOf()	Returns the position of the first occurrence of a specified string inside another string. Returns -1 if it never occurs
italics()	Returns a string in italic
lastIndexOf()	Returns the position of the first occurrence of a specified string inside another string. Returns -1 if it never occurs. Note: This method starts from the right and moves left!
link()	Returns a string as a hyperlink
match()	Similar to indexOf and lastIndexOf, but this method returns the specified string, or "null", instead of a numeric value
replace()	Replaces some specified characters with some new specified characters
search()	Returns an integer if the string contains some specified characters, if not it returns -1
slice()	Returns a string containing a specified character index
small()	Returns a string as small text
split()	Splits a string into an array of strings
strike()	Returns a string strikethrough
sub()	Returns a string as subscript
substr()	Returns the specified characters. 14,7 returns 7 characters, from the 14th character (starts at 0)
substring()	Returns the specified characters. 7,14 returns all characters from the 7th up to but not including the 14th (starts at 0)
sup()	Returns a string as superscript
toLowerCase()	Converts a string to lower case
toUpperCase()	Converts a string to upper case

Αντικείμενο Math

Ιδιότητες	Επεξήγηση
E	Returns the base of a natural logarithm
LN2	Returns the natural logarithm of 2
LN10	Returns the natural logarithm of 10
LOG2E	Returns the base-2 logarithm of E
LOG10E	Returns the base-10 logarithm of E
PI	Returns PI
SQRT1_2	Returns 1 divided by the square root of 2
SQRT2	Returns the square root of 2

Μέθοδος	Επεξήγηση
abs(x)	Returns the absolute value of x
acos(x)	Returns the arccosine of x
asin(x)	Returns the arcsine of x
atan(x)	Returns the arctangent of x
atan2(y,x)	Returns the angle from the x axis to a point
ceil(x)	Returns the nearest integer greater than or equal to x
cos(x)	Returns the cosine of x
exp(x)	Returns the value of E raised to the power of x
floor(x)	Returns the nearest integer less than or equal to x
log(x)	Returns the natural log of x
max(x,y)	Returns the number with the highest value of x and y
min(x,y)	Returns the number with the lowest value of x and y
pow(x,y)	Returns the value of the number x raised to the power of y
random()	Returns a random number between 0 and 1
round(x)	Rounds x to the nearest integer
sin(x)	Returns the sine of x
sqrt(x)	Returns the square root of x
tan(x)	Returns the tangent of x

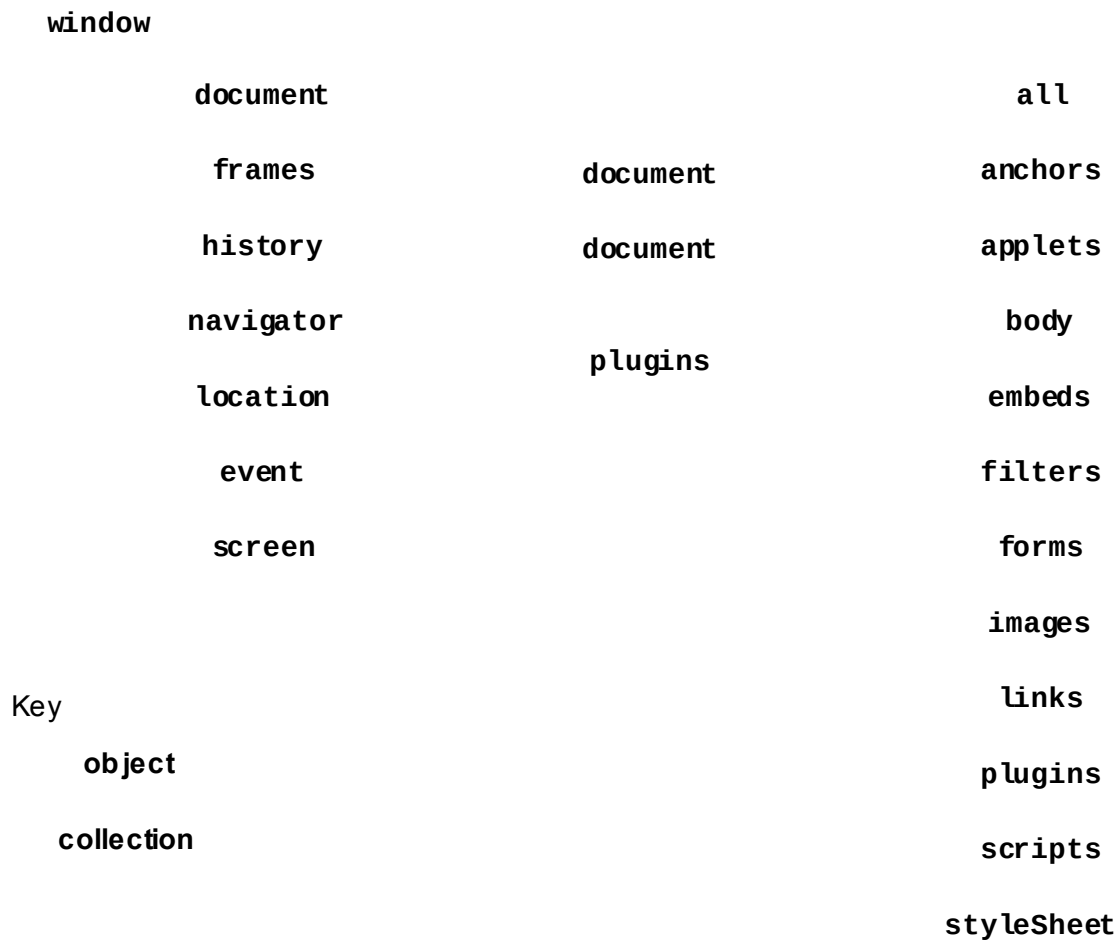
Αντικείμενο Date



Μέθοδος	Επεξήγηση
Date()	Returns a Date object
getDate()	Returns the date of a Date object (from 1-31)
getDay()	Returns the day of a Date object (from 0-6. 0=Sunday, 1=Monday, etc.)
getMonth()	Returns the month of a Date object (from 0-11. 0=January, 1=February, etc.)
getFullYear()	Returns the year of a Date object (four digits)
getYear()	Returns the year of a Date object (from 0-99). Use getFullYear instead !!
getHours()	Returns the hour of a Date object (from 0-23)
getMinutes()	Returns the minute of a Date object (from 0-59)
getSeconds()	Returns the second of a Date object (from 0-59)
getMilliseconds()	Returns the millisecond of a Date object (from 0-999)
getTime()	Returns the number of milliseconds since midnight 1/1-1970
getTimezoneOffset()	Returns the time difference between the user's computer and GMT
parse()	Returns a string date value that holds the number of milliseconds since January 01 1970 00:00:00
setDate()	Sets the date of the month in the Date object (from 1-31)
setFullYear()	Sets the year in the Date object (four digits)
setHours()	Sets the hour in the Date object (from 0-23)
setMilliseconds()	Sets the millisecond in the Date object (from 0-999)
setMinutes()	Set the minute in the Date object (from 0-59)
setMonth()	Sets the month in the Date object (from 0-11. 0=January, 1=February)
setSeconds()	Sets the second in the Date object (from 0-59)
setTime()	Sets the milliseconds after 1/1-1970
setYear()	Sets the year in the Date object (00-99)
toGMTString()	Converts the Date object to a string, set to GMT time zone
toLocaleString()	Converts the Date object to a string, set to the current time zone
toString()	Converts the Date object to a string

Αντικειμενοστραφές Μοντέλο (Object Model)

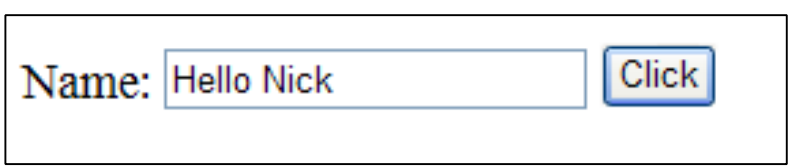
- Λογική απεικόνιση του τρόπου που τα αντικείμενα ομαδοποιούνται σε μια εφαρμογή
  - π.χ. Web Browser



Προσπέλαση αντικειμένων

- Χρησιμοποιούμε το Object Model
  - το «window» μπορεί και να παραληφθεί
  - μέσω pop-up παραθύρων

```
<html>
<head>
<script type="text/javascript">
  function getValue(){
    var name = document.myform.mytext.value;
        if (name!=""){
            alert(name);
            document.myform.mytext.value="Hello " + name;
        }
  }
</script>
</head>
<body>
<form name="myform" action="#">
        Name: <input type="text" name="mytext" value=""/>
        <input type="button" value="Click" onClick="getValue()"/>
</form>
</body>
</html>
```



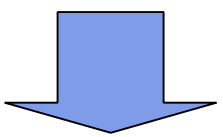
Γεγονότα (events) και χειριστές γεγονότων (event handlers)

- Γεγονότα (events)
  - Ενέργειες που πραγματοποιούνται από το χρήστη
    - Τοποθέτηση του δείκτη του ποντικιού πάνω από μια εικόνα
    - Πάτημα κάποιου κουμπιού του πληκτρολογίου
    - Υποβολή μιας φόρμας
    - Κλικ του ποντικιού
  - Ενέργειες που πραγματοποιούνται από το browser
    - Φόρτωμα μιας σελίδας ή μιας εικόνας

- Χειριστές Γεγονότων (event handlers)
  - εξετάζουν για την πραγματοποίηση κάποιου event
  - ανιχνεύουν την πραγματοποίηση κάποιου event
  - εκτελούν μια συγκεκριμένη διαδικασία
    - π.χ. κλήση μιας συνάρτησης javascript

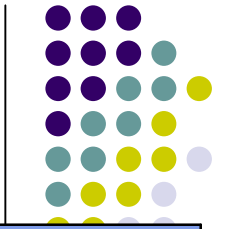
Γεγονότα (events) και χειριστές γεγονότων (event handlers)

```
<html>
<head>
<script type="text/javascript">
  function setText(){
        document.myform.mytextEval.value="Hello " + document.myform.mytext.value;
  }
</script>
</head>
<body>
<form name="myform" action="#">
        Name: <input type="text" name="mytext" value="" onChange="setText()"/>
        Evaluate Name: <input type="text" name="mytextEval" value=""/>
</form>
</body>
</html>
```



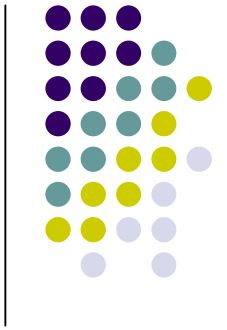
Name: Maria Evaluate Name: Hello Maria

Λίστα γεγονότων (συνηθισμένων)



Χαρακτηριστικό γεγονότος	Ετικέτα που μπορεί να εφαρμοστεί	Συμβαίνει όταν
onclick	<a> <input type=”button”> <input type=”submit”> <input type=”reset”> <input type=”radio”> <input type=”checkbox”>	User clicks on a link. User pressed a button. User pressed a submit button. User pressed a reset button. User pressed a radio button. User clicks a checkbox.
onfocus onblur	<body> <frameset> <frame> <input type=”text”> <textarea> <select>	The element gets focus when user places the blinking cursor for example in the textfield. An element becomes blurred when the user moves the focus to another element.
onchange	<input type=”text”> <textarea> <select>	User changes or edit the content inside a textfield/text area or user select different list from the combobox.
onload	<img> <body> <frameset	Image, document or frameset finished loading.
onunload	<body> <frameset	User close the document or exits a frameset.
onmouseover onmouseout	<a> <area>	onmouseover is when a mouse cursor is placed on top of the link and onmouseout is when a mouse cursor is moved away from the link.
onsubmit onreset	<form>	Onsubmit is when submit button is pressed and onreset is when the reset button is pressed.
onselect	<input type=”text”> <textarea>	The content in the textfield/textarea is selected.

Παράδειγμα (Forms,Events,Javascript)



```
<html>
<head>
<head>
<script type="text/javascript">
 function validateForm(){
        var validationMessage ="";
         if (document.entryForm.username.value!="Nick")
                validationMessage=validationMessage+"Μη έγκυρος χρήστης.\n";
        if (document.entryForm.pass.value!=document.entryForm.repass.value)
                validationMessage=validationMessage+"Το passwords δεν έχει ταυτοποιηθεί.\n";
        if (document.entryForm.comments.value=="")
                validationMessage=validationMessage+"Παρακαλώ συμπληρώστε τα σχόλιά σας.\n";

        validationMessage=validationMessage+validateEmail(document.entryForm.email.value);
        validationMessage=validationMessage+validateUni(document.entryForm.selectUni);
        if (validationMessage!="")
                alert(validationMessage);
 }

 function validateEmail(emailValue){
        aliaspos=emailValue.indexOf("@")
        dotpos=emailValue.lastIndexOf(".");
        if (aliaspos == -1 || dotpos==-1)
                return "Μη έγκυρη διεύθυνση email.\n";
        else
                return "";

 }

 function validateUni(dropDownName){
        uniIndex=dropDownName.selectedIndex;
        uniValue=dropDownName.options[uniIndex].value;
        if (uniValue!="uop")
                return "Λανθασμένη επιλογή εκπαιδευτικού ιδρύματος.\n";
        else
                return "";
 }
</script>
</head>
```

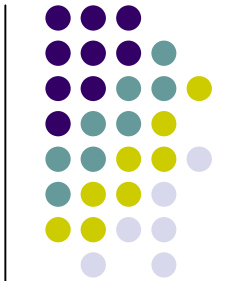
Escape Sequence	Description
\n	New line: Position the cursor to the beginning of the next line.
\t	Horizontal Tab: Move the cursor to the next tab stop.
\r	Carriage return: Position the cursor back to the beginning of the current line. Any characters output after the carriage return will overwrite the previously output characters on that line.
\\	Backslash: To display a backslash character
\″	Double quote: To display double quote in a string. (this can be use in document.write)
\′	Single quote: To display a single quote in a string.

Παράδειγμα (Forms,Events,Javascript)

```
<body>
<form method="post" name="entryForm" action="process.php" enctype="text/plain">
        Username:
        <input type="text" name="username" size="15" maxlength="50" />
        <br /><br />
        Password:
        <input type="password" name="pass" size="20" />
        <br /><br />
        Retype Password:
        <input type="password" name="repass" size="20" />
        <br /><br />
        Email:
        <input type="text" name="email" size="20" />
        <br /><br />
        Comments: <textarea name="comments" cols="30" rows="5"></textarea>
        <br /><br />
Εκπαιδευτικό Ίδρυμα:
        <select name="selectUni">
                <option value="teiath">ΤΕΙ Αθήνας</option>
        <option value="teipir" selected="true">ΤΕΙ Πειραιά</option>
        <option value="uop">Πανεπ. Πελοποννήσου</option>
        </select>
<br /><br />
        <input type="button" value="Επικύρωση" onClick="validateForm();"/>
        <br /><input type="submit" value="Αποστολή" />
        <input type="reset" value="Καθαρισμός" />
</form>

</body>
</html>
```

Παράδειγμα (Forms,Events,Javascript)



Username: Petros

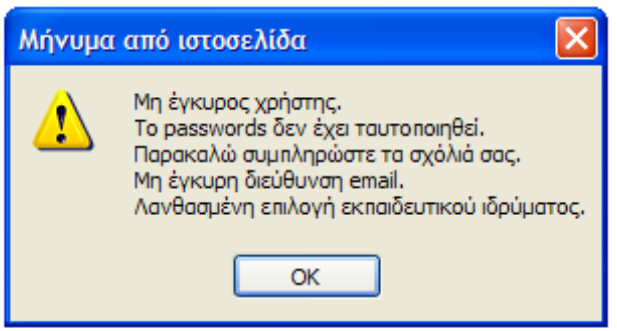
Password: ••••••

Retype Password: ••••••

Email: petros.uop.gr

Comments:

Εκπαιδευτικό Ίδρυμα: ΤΕΙ Πειραιά

Επικύρωση

Αποστολή Καθαρισμός