

Objects & functions in JavaScript

Objects

- ❑ JavaScript is an object based scripting languages
- ❑ An object is an programmable entity that can be used in the script
- ❑ Every object has certain properties and methods that extends he functionality to work with those aspect of the web page
- ❑ A property refers to the attribute of the object
- ❑ Methods refers to the particular action that can be performed on the object
- ❑ Property and method differs from one object to other
- ❑ Commonly used JavaScript objects are
 - ❑ String Objects
 - ❑ Array objects
 - ❑ Date objects

JavaScript Objects

- ❑ Objects are also variable but they can multiple values.
- ❑ Values are written as **name:value** pair separated by colon.
- ❑ Three ways to create objects in JavaScript:
 - ❑ By object literal
 - ❑ By creating instance of Object.
 - ❑ By using Object constructor

JavaScript object by object literal

❑ Syntax:

Object = {name1:value1,name2:value2,...nameN:valueN}

❑ Example:

var student = {sid:20009,name:"Nima",gender:"Female",Course:BScIT}

JavaScript by creating instance of Object

❑ Syntax:

Var objectName = new Object();

❑ Example:

var student = new Object();

student.name = “Nima”;

student.gender = “Female”;

By Object Constructor

- ❑ you need to create function with arguments. Each argument value can be assigned in the current object by using this keyword.
- ❑ Example:

```
function student(sid,name,gender){  
  
    this.sid = Sid;  
  
    this.name=name;  
  
    this.gender=gender;  
  
}  
  
std = new student(20009,"Nima","Female");
```

String Objects

- ❑ A string is a sequence of letters, digits, punctuation and so on.
- ❑ And string in JavaScript is wrapped in single or double quotes.
- ❑ The objects allows you to create and manipulate a string of characters
- ❑ Syntax for creating the string objects

var str=new String(string);

- ❑ String properties
 - ❑ **length**: to return the length of the string
- ❑ Eg.

```
Var str= new String("Dorji");  
document.write("the length of the string is "+str.length);
```

String Objects

❑ The methods are

charAt()	Returns the character at a specific index.
indexOf()	Find the first index of a character.
lastIndexOf()	Find the last index of a character
replace()	Replaces a specified value with another value in a string.
toLowerCase()	Converts a string to lower case
toUpperCase()	Converts a string to upper case
match()	to search for a matching content in a string.

Array Objects

- ❑ Array allows you to store multiple values in a single variable
- ❑ Syntax to create array objects

var a=new Array(“Dorji”, “Lhamo”, “Tashi”);

- ❑ You can create array by simply assigning as follows

var fruits=[“orange”, “apple”, “lemon”];

Or

var fruits=new Array();

fruits[0]=“orange”;

fruits[1]=“apple”;

fruits[3]=“lemon”;

Array Objects

- ❑ Properties

- ❑ **length:** reflects the number of elements in the array

- ❑ Various methods to be explored

Date Objects

- The Date object is a data type built into the JavaScript language. Date objects are created with the **new Date()** as shown below.
- Once a Date object is created, a number of methods allow you to operate on it.
- Most methods simply allow you to get and set the year, month, day, hour, minute, second, and millisecond fields of the object, using either local time or UTC (universal, or GMT) time.
- Various methods to be explored

Functions

- A function is a group of reusable code which can be called anywhere in your programme.
- Like any other advance programming language, JavaScript also supports all the features necessary to write modular code using functions.
- JavaScript function can be either inbuilt function or user defined function
- JavaScript allows us to write our own functions as well.

Functions definition

- Before we use the function we have to define the function

Eg.

```
<script type="text/javascript">
```

```
<!--
```

```
function functionname(parameter-list)
```

```
{
```

```
    statements
```

```
}
```

```
//-->
```

```
</script>
```

Calling Functions

- We can invoke function simply by providing the function name with or without parameter

Eg.

```
<script type="text/javascript"><script type="text/javascript">
```

```
<!--
```

```
functionname(parameter-list);
```

```
//-->
```

```
</script>
```

```
<!--
```

Functions

```
<html>
<head>
<script type="text/javascript">
function sayHello(name, age)
{ alert( name + " is " + age + " years old.");}
</script>
</head>
<body>
<p>Click the following button to call the function</p>
<form>
<input type="button" onclick="sayHello('Zara', 7)" value="Say Hello">
</form>
<p>Use different parameters inside the function and then try...</p>
</body>
</html>
```

Thank you.