**DAY 9- JavaScript**

https://lh6.googleusercontent.com/pzfkpYzj_xNKuCIRaMdGOcJRGHimowNa5u7Ned4rI9rrL8AGediPxVgoTzYM65B3F7T2wKnzzs4NN42aMrsGf_ZZvSDkx9V2RHZ5SJ6YjjldEA7E9x9SwUSXZmLWBKV9rfHuNRbkG3bXpFexSg

**Refresh yesterday’s Class-10 Minutes**

1. Changing the style of an HTML element, which of the followed is true?
2. document.getElementById("demo")fontSize = "25px";
3. document.getElementById("demo").fontSize = "25px";
4. document.getElementById("demo").style.fontSize = "25px";
5. document.getElementById("demo").style.font = "25px";

**Answer:- c**

1. We can include JavaScript code anywhere in an html document.
2. True
3. False

**Answer:- a**

1. We can save JavaScript source code in a simple text file with the extension
2. .html
3. .css
4. .java
5. .js

**Answer:- d**

**Lecture-20 Minutes**

* **JavaScript Variables**

A **JavaScript variable** is simply a name of storage location. There are two types of variables in JavaScript : local variable and global variable.

There are some rules while declaring a JavaScript variable (also known as identifiers).

1. Name must start with a letter (a to z or A to Z), underscore( \_ ), or dollar( $ ) sign.
2. After first letter we can use digits (0 to 9), for example value1.
3. JavaScript variables are case sensitive, for example x and X are different variables.

var x = 10;

var \_value="sonoo";

<html>

<body>

<script>

var x = 10;

var y = 20;

var z=x+y;

document.write(z);

</script>

</body>

**JavaScript local variable**

A JavaScript local variable is declared inside block or function. It is accessible within the function or block only.

<script>

function abc()

{

var x=10; //local variable

}

</script>

**OR**

<script>

If(10<13)

{

var y=20; //JavaScript local variable

}

</script>

**JavaScript global variable**

A **JavaScript global variable** is accessible from any function. A variable i.e. declared outside the function or declared with window object is known as global variable.

<script>

var data=200;//gloabal variable

function a()

{

document.writeln(data);

}

function b()

{

document.writeln(data);

}

a(); //calling JavaScript function

b();

</script>

* **JavaScript Operators**
  + **Arithmetic**
  + **Assignment**
  + **Comparison**

JavaScript operators are symbols that are used to perform operations on operands.

There are following types of operators in JavaScript.

1. Arithmetic Operators
2. Comparison (Relational) Operators
3. Assignment Operators
4. **JavaScript Arithmetic Operators**

Arithmetic operators are used to perform arithmetic operations on the operands. The following operators are known as JavaScript arithmetic operators.

|  |  |  |
| --- | --- | --- |
| **Operator** | **Description** | **Example** |
| + | Addition | 10+20 = 30 |
| - | Subtraction | 20-10 = 10 |
| \* | Multiplication | 10\*20 = 200 |
| / | Division | 20/10 = 2 |
| % | Modulus (Remainder) | 20%10 = 0 |
| ++ | Increment | var a=10; a++; Now a = 11 |
| -- | Decrement | var a=10; a--; Now a = 9 |

Eg:-

var x = 100 + 50;

## JavaScript Comparison Operators

The JavaScript comparison operator compares the two operands. The comparison operators are as follows:

|  |  |  |
| --- | --- | --- |
| **Operator** | **Description** | **Example** |
| == | Is equal to | 10==20 = false |
| === | Identical (equal and of same type) | 10==20 = false |
| != | Not equal to | 10!=20 = true |
| > | Greater than | 20>10 = true |
| >= | Greater than or equal to | 20>=10 = true |
| < | Less than | 20<10 = false |
| <= | Less than or equal to | 20<=10 = false |

1. **JavaScript Assignment Operators**

The following operators are known as JavaScript assignment operators.

|  |  |  |
| --- | --- | --- |
| **Operator** | **Description** | **Example** |
| = | Assign | 10+10 = 20 |
| += | Add and assign | var a=10; a+=20; Now a = 30 |
| -= | Subtract and assign | var a=20; a-=10; Now a = 10 |
| \*= | Multiply and assign | var a=10; a\*=20; Now a = 200 |
| /= | Divide and assign | var a=10; a/=2; Now a = 5 |
| %= | Modulus and assign | var a=10; a%=2; Now a = 0 |

**Activity-40 Minutes**

* **JavaScript Variables**

<html>

<body>

<script>

var x = 10;

var y = 20;

var z=x+y;

document.write(z);

</script>

</body>

</html>

**JavaScript local variable**

<html>

<body>

<script>

function abc()

{

var x=10; //local variable

}

</script>

</body>

</html>

**OR**

<html>

<body>

<script>

If(10<13)

{

var y=20; //JavaScript local variable

}

</script>

</body>

</html>

**JavaScript global variable**

<html>

<body>

<script>

var data=200;//gloabal variable

function a(){

document.writeln(data);

}

function b(){

document.writeln(data);

}

a();//calling JavaScript function

b();

</script>

</body>

</html>

* **JavaScript Operators**
  + **Arithmetic**
  + **Assignment**
  + **Comparison**

**Arithmetic**

<html>

<body>

<script type="text/javascript">

<!--

var a = 33;

var b = 10;

var c = "Test";

var linebreak = "<br />";

document.write("a + b = ");

result = a + b;

document.write(result);

document.write(linebreak);

document.write("a - b = ");

result = a - b;

document.write(result);

document.write(linebreak);

document.write("a / b = ");

result = a / b;

document.write(result);

document.write(linebreak);

document.write("a % b = ");

result = a % b;

document.write(result);

document.write(linebreak);

document.write("a + b + c = ");

result = a + b + c;

document.write(result);

document.write(linebreak);

a = ++a;

document.write("++a = ");

result = ++a;

document.write(result);

document.write(linebreak);

b = --b;

document.write("--b = ");

result = --b;

document.write(result);

document.write(linebreak);

//-->

</script>

Set the variables to different values and then try...

</body>

</html>

**Output**

a + b = 43  
a - b = 23  
a / b = 3.3  
a % b = 3  
a + b + c = 43Test  
++a = 35  
--b = 8  
Set the variables to different values and then try...

**Comparison**

<html>

<body>

<script type="text/javascript">

<!--

var a = 10;

var b = 20;

var linebreak = "<br />";

document.write("(a == b) => ");

result = (a == b);

document.write(result);

document.write(linebreak);

document.write("(a < b) => ");

result = (a < b);

document.write(result);

document.write(linebreak);

document.write("(a > b) => ");

result = (a > b);

document.write(result);

document.write(linebreak);

document.write("(a != b) => ");

result = (a != b);

document.write(result);

document.write(linebreak);

document.write("(a >= b) => ");

result = (a >= b);

document.write(result);

document.write(linebreak);

document.write("(a <= b) => ");

result = (a <= b);

document.write(result);

document.write(linebreak);

//-->

</script>

Set the variables to different values and different operators and then try...

</body>

</html>

**Output**

(a == b) => false  
(a < b) => true  
(a > b) => false  
(a != b) => true  
(a >= b) => false  
(a <= b) => true  
Set the variables to different values and different operators and then try...

**Assignment**

<html>

<body>

<script type="text/javascript">

<!--

var a = 33;

var b = 10;

var linebreak = "<br />";

document.write("Value of a => (a = b) => ");

result = (a = b);

document.write(result);

document.write(linebreak);

document.write("Value of a => (a += b) => ");

result = (a += b);

document.write(result);

document.write(linebreak);

document.write("Value of a => (a -= b) => ");

result = (a -= b);

document.write(result);

document.write(linebreak);

document.write("Value of a => (a \*= b) => ");

result = (a \*= b);

document.write(result);

document.write(linebreak);

document.write("Value of a => (a /= b) => ");

result = (a /= b);

document.write(result);

document.write(linebreak);

document.write("Value of a => (a %= b) => ");

result = (a %= b);

document.write(result);

document.write(linebreak);

//-->

</script>

<p>Set the variables to different values and different operators and then try...</p>

</body>

</html>

**Output**

Value of a => (a = b) => 10  
Value of a => (a += b) => 20  
Value of a => (a -= b) => 10  
Value of a => (a \*= b) => 100  
Value of a => (a /= b) => 10  
Value of a => (a %= b) => 0

Set the variables to different values and different operators and then try...

**Lecture-30 Minutes**

* + **JavaScript Functions**

**JavaScript functions** are used to perform operations. We can call JavaScript function many times to reuse the code.

There are mainly two advantages of JavaScript functions.

1. **Code reusability**: We can call a function several times so it save coding.
2. **Less coding**: It makes our program compact. We don’t need to write many lines of code each time to perform a common task.

**Syntax**

function functionName([arg1, arg2, ...argN])

{

 //code to be executed

}

<html>

<body>

<script>

function msg(){

alert("hello! this is message");

}

</script>

<input type="button" onclick="msg()" value="call function"/>

</body>

</html>



* + **JavaScript Dates**
    - **Date Methods**

The Date object is a datatype built into the JavaScript language. Date objects are created with the **new Date( ).**

<html>

<body>

Current Date and Time: <span id="txt"></span>

<script>

var today=new Date();

document.getElementById('txt').innerHTML=today;

</script>

</body>

</html>

**Output**

Current Date and Time: Tue Jul 04 2017 12:12:22 GMT-0700 (Pacific Daylight Time)

### **JavaScript Current Time**

<html>

<body>

Current Time: <span id="txt"></span>

<script>

var today=new Date();

var h=today.getHours();

var m=today.getMinutes();

var s=today.getSeconds();

document.getElementById('txt').innerHTML=h+":"+m+":"+s;

</script>

</body>

</html>

**Output**

Current Time: 12:15:57

**JavaScript Today’s date**

<html>

<body>

<script>

var date=new Date();

var day=date.getDate();

var month=date.getMonth()+1;

var year=date.getFullYear();

document.write("<br>Date is: "+day+"/"+month+"/"+year);

</script>

</body>

</html>

**Output**

Date is: 4/7/2017

### **JavaScript Digital Clock Example**

<html>

<body>

Current Time: <span id="txt"></span>

<script>

window.onload=function(){getTime();}

function getTime(){

var today=new Date();

var h=today.getHours();

var m=today.getMinutes();

var s=today.getSeconds();

// add a zero in front of numbers<10

m=checkTime(m);

s=checkTime(s);

document.getElementById('txt').innerHTML=h+":"+m+":"+s;

setTimeout(function(){getTime()},1000);

}

//setInterval("getTime()",1000);//another way

function checkTime(i){

if (i<10){

i="0" + i;

}

return i;

}

</script>

</body>

</html>