**JavaScript**

**What is JavaScript?**

JavaScript is a cross-platform, object-oriented scripting language used to make webpages interactive (e.x. having complex animations, clickable buttons, popup menus, etc.). There are also more advanced server side versions of javascript such as Node.Js which allow you to add more functionality to a website than simply downloading files (such as real time collaboration between multiple computers). Inside a host environment (for example, a web browser), JavaScript can be connected to the objects of its environment to provide programmatic control over them.

**Data Type in JS**

-**Boolean**. true and false.

-**null**. A special keyword denoting a null value. Because JavaScript is case-sensitive, null is not the same as Null, NULL, or any other variant.

-**undefined**. A top-level property whose value is not defined.

-**Number**. An integer or floating point number. For example: 42 or 3.14159.

-**String.** A sequence of characters that represent a text value. For example: "Howdy"

-**Symbol** (new in ECMAScript 2015). A data type whose instances are unique and immutable

## **JavaScript Arithmetic Operators**

Arithmetic operators are used to perform arithmetic on numbers:

|  |  |
| --- | --- |
| **Operator** | **Description** |
| + | Addition |
| - | Subtraction |
| \* | Multiplication |
| / | Division |
| % | Modulus (Division Remainder) |
| ++ | Increment |
| -- | Decrement |

## **JavaScript Assignment Operators**

Assignment operators assign values to JavaScript variables.

|  |  |  |
| --- | --- | --- |
| **Operator** | **Example** | **Same As** |
| = | x = y | x = y |
| += | x += y | x = x + y |
| -= | x -= y | x = x - y |
| \*= | x \*= y | x = x \* y |
| /= | x /= y | x = x / y |
| %= | x %= y | x = x % y |

## **JavaScript Comparison Operators**

|  |  |
| --- | --- |
| **Operator** | **Description** |
| == | equal to |
| === | equal value and equal type |
| != | not equal |
| !== | not equal value or not equal type |
| > | greater than |
| < | less than |
| >= | greater than or equal to |
| <= | less than or equal to |
| ? | ternary operator |

**Strings In JS**

A JavaScript string is zero or more characters written inside quotes.

syntax: var str = ”hello world”;

**Properties**

**length :** to find the length of the string

**Methods**

**indexOf :**The indexOf() method returns the index of (the position of) the first occurrence of a specified text in a string

**slice()** :extracts a part of a string and returns the extracted part in a new string

**UpperCase()**:A string is converted to upper case with

**toLowerCase()**:A string is converted to lowercase with

**concat():** joins two or more strings

**CharAt()** method returns the character at a specified index (position) in a string

**Objects in JS**

We can create objects in js using two techniques

1)Constructor function

2)Object Literals

**1)Constructor Function**

Syntax:

function Employee(FirstName,LastName){

this.FirstName=FirstName;

this.LastName=LastName;

this.fullName=function(){

return this.FirstName" "+this.LastName

}

};

var emp1=new Employee('Abhi','Khutwad');

**2)Object Literal**

Syntax:

var emp={

FirstName:"Abhi",

LastName:"Khutwad",

getFullName:function(){

return emp.FirstName+" "+emp.LastName;

}

}

# **JavaScript Number Methods**

## **1:The toString() Method**

**toString()** returns a number as a string.

All number methods can be used on any type of numbers (literals, variables, or expressions):

**2:The toExponential() Method**

**toExponential()** returns a string, with a number rounded and written using exponential notation.

A parameter defines the number of characters behind the decimal point:

**3:The toFixed() Method**

**toFixed()** returns a string, with the number written with a specified number of decimals:

**4:The toPrecision() Method**

**toPrecision()** returns a string, with a number written with a specified length:

**5:The valueOf() Method**

**valueOf()** returns a number as a number.