**JavaScript: client- side scripting language.**

**JavaScript** is **programming language** that is used to make **web pages interactive**.

**Is Interpreted language**. [ interpreted by **web browser when the web page is loaded**]

**Runs** on the **client’s computer/browser**.

Object based. [JavaScript in **Not** Java]

JavaScript uses “**events**” and “**actions**” to make your page interactive

**Uses of JavaScript:**

1. **Form validation**
2. **Popup ads**
3. **Dynamic pages.**
4. **With JavaScript** we can **put content in an HTML** page on the fly. Make **web pages responsive**.
5. **Detect** a user’s **browser, OS** and other info.
6. **Create cookies**.
7. Create animations, slideshows. Build Apps with JavaScript.

HTML is markup language and JavaScript is a programming language. They work together.

Syntax of JavaScript:

<script type=text/javascript> code </script>

Or

<script language=”javascript”>code </script>

We can write JavaScript code in <head> tag a well as <body> tag. We write and save as external file with **.js** extension and can be called by using <script type=”text/javascript” src”path of the file”>code></script>

**Variables:**

Variables are used to store the data, [ **var, let, const** ]

**Datatypes:**

Int numbers

Float decimals

Char single codes

String double codes

Boolean true or false

Null empty

**Syntax:**

var num =1111; /// is number

var name =”chakra”; /// is string

**Operators: is a symbol to perform some operation.**

**Types of operators:**

1. **Arithmetic Operators**

**+ , - , \* , / ,%**

1. **Assignment Operators**

**= , += , -= .\*= , /= .%=**

1. **Relational Operators [ Comparison Operators ]**

**== , != , > , < , >= , <=**

1. **Logical Operators**

**\*\* , || , !**

1. **Increment / Decrement Operators**

**++ . –**

**[ preincrement ++a]**

**a=10;**

**b=++a**

**a=11, b=11**

**[postincrement]**

**a=10;**

**b=a++;**

**b=10,a=11**

1. **Concatenation Operators**

**+**

**Control Statements:**

1. **If**
2. **If – else**
3. **If - else – if**
4. **nested if**
5. **switch**

**Loops**

1. **while**
2. **do - while**
3. **for**

**Functions: is a collection of statements, to perform some specific operation.**

Syntax:

function functionName() // normal methods

{ statements }

function functionName(parameer1, parameter2) just pass value datatype no need // normal methods

{ statements }

function functionName() // returns methods

{

statements

return value;

}

To execute function, we have to call the function:

functionName();

or

funtionName(paramter1, parameter2);

or

Var result=functionName();

arguments – is predefined variable can be used only in functions.

**[ it stores the data in arrays style form to access we can use]**

Eg:

<script>

function sample()

console.log(arguments);

</script>

Sample(10,20,30);

Similar to java arrays – arguments[index]

To find length of argument [ arguments.length ]

**Recursion: is function calling itself.** It should be called by using **if** condition**.** If not, it call infinite time

Best example is finding Factorial number [5! = 5\*4\*3\*2\*1]

Syntax

function factNumber(n)

{

If(n==1)

return 1;

else

return n\* factNumber(n-1)

}

var result =factNumber(5);

Console.log(result);

**Mouse Events:**

onclick ondblclick onsubmit onchange

onblur onfocus onmouseover onmouseout

**Date functions:**

Var v=new Date()

document.write(“ date “+v.getDate());

**Math functions: [ there are predefined mathematical functions ]**

document.write(Math.ceil(37.24));

**JavaScript is OOP Language**

**Objects are created by developers [** object contains properties and methods**]**

**How to create objects in JavaScript:**

**Three ways:**

1. **object Literal Pattern:**

Whenever we have created properties and methodsusing **{}**.

{} empty object

or

{

a:10,

b:20,

add:function()

{

// this.a+this.b

console.log(this.a+this.b);

}

}

var sample = or

{

a:10,

b:20,

add:function()

{

// this.a+this.b

console.log(this.a+this.b);

}

Console.log(sample);

}

1. **Constructor Function Pattern**
2. **Prototype Pattern**

**Commands**

**alert(“ hello java script) --**

**var name = prompt(“ enter you name “) ;** / prompt for user input.

**document.write(name);** // writes on the web page / browser

**console.write ( name);** // to write on console lller to java sout