**What is java script :**

It is a object based programming language use to convert into static page into dynamic page

**Ways of writing the java script:**

There are two ways 1.internal way 2.external way

1.the java script code is written in the same page as the HTML page

2.the java script code is written in the separate page and then it is connected to the HTML page using the script src

script src is used to link the external java script to the HTML code

**The variables in js:**

* Used to store data/values(data-types)
* Dynamic in nature (no need of defining any type of the data type )

**There are 3-types:**

Var, let , const

**Data types:**

There are two types of data types in js

**primitive :**

**It can store single values**

Number,string ,boolean,undefined,null,bigint,symbol

1. String :- sequence of characters stored within double quotes / single quotes/ backticks(templateliterals ``)

ex: var username = "Mahesh Babu";

let title = 'super start';

char networth = `120cr`;

typeof(); method used to define the type of data

2. Boolean :- true / false.

Re-declaration is not allowed.

3. number:- integers, float, decimal, exponential etx...

-2^53-1 to +2^53-1 bigInt range

ex: let num = 10;

let num2 = 12.233;

let num3 = 10e4;

4. undefined:- variable is declared but value is not defining/initialised.

let a;

console.log(a);

5. null :- null is a abscence of object / empty space

but the datatype of null is still an object (bug)

what is the return type of null ? A: object

**Non-primitive:**

**It can store multiple values**

Class ,functions,objects,map,set,array

**concatenation:**

**Ex:** console.log(10+"10");

console.log(10+"hi");

console.log("hi"+10+40);

**bodamas rule:**

**Ex:**

console.log("hi"+(10+40));

**Type casting:**

**Ex:**

console.log("10"-5);//typecasting

console.log(10\*"5");

Typecasting can be done for all the operations expect the additions

**Increment:**

Used for the increasing the values.

If the console.log(++a);

Means that it add the one to the a value

If the console.log(a++);

Means that it will first give the a value and store the increased value in the memory .

**Decrement:**

Used to the decrease the values.

Similarity to the increment but for the decreasing the values .

**Arithmatic :-** Which performs oeprations such as

- Additon (concatenation)

- Subtraction

- multiplication

- Division

- modulus

- exponential

**Assignment:**

Use for the all the operations

Ex:

let c = 10;

c += 5;

console.log(c);

let d = 10;

d -= 5;

console.log(d);

let e = 10;

e \*= 5;

console.log(e);

let f = 10;

f /= 5;

console.log(f);

let g = 10;

g %= 5;

console.log(g);

let h = 10;

h \*\*= 5;

console.log(h);

**Comparison (Relation operator) :**

Used for the comparing the two values either the value is true or false.

Ex:

console.log(10 > 5);

**Logical operator:**

If the one operator is true and the other is false the the output is true in ||.

If the both are true the the output is true in &&.

If the operator is true and the write as the !operator then the output is the false in !.

Ex:

let ac = true;

let ad = true;

console.log(ac && ad);

let ag = true;

let ah = false;

console.log(ag || ah);

let am = true;

let an = false;

console.log(!am);

**If-else:**

If is true and the else is false.

**If-else if :**

Same as the if-else.

**Switch case:**

We use the cases in it and find the output.

**Loops:**

There are different types in loops

For loop :

The min iteration is zero.

While loop

Functions :

* It is the blocks in java script
* It means the block of code used to excite specific task
* It is a non-primitive
* It can be reusable.

Syntax:

Function function\_name(optional parameters){//function statement}

**types of functions :**

1. named functions(

2. anonymous functions(a function which donot have a name for it . It can not be executed by itself.)

3. function expressions(

4.IIFE(immediate invoke function expression)

5.arrow functions(it concise the normal function

6.higher order functions

Note:

Current version of js is es14.

Es: ECMA script

ECMA : european coumputer manufacturing association.

Es6 feature is the stable.

Note:

For the named function we define the function .but in the anonymous function we use the variable to define the function.function expressions is also same as the anonymous function.

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**Types of scopes:**

Global : it means that if we declare the function in outside and we can use it inside the function

Local :it means that if the function is declare out side it cannot be defined inside the function

Block : we define the function inside the flower bracks

**Arrays:**

What is object?

* Object is the entity which contains states and behaviors.
* States:- properties, behavior –functionality.
* Object is an entity to store the values in the form key and value pair.

Syntax:- let obj = {};

Ex:- let userdetails ={

Name:”sam”,

Age:23

}

Note:- js is the mainly the object – based language till 2015(es6).

* After es6 the features they added oops concept.

**Json:-**

Json.stringify():- it is used to convert the js object(object) into the json object (string)

Json.parse():- it is used to convert the json object(string) into the js object(object)

**Asynchronous in java script:**

To perform the multiple tasks at a time

1.setTimeout(): it is wed api used to perform the ansyc operations with certain time

Syntax: setTimeout(callbackfn , timeout);

2.setIntervel(): it is wed api used to perform ansy operations at every interval time

Syntax: setInterval(callbackfn , timeout)

3.promise: is an object which represent eventual completion or fail

States of promise:-

1.pending state

2.fulfilled state

3.rejected state

Syntax:- let x = new Promise((resolve ,reject)=>{});

To execute the promise we have instance methods:-

1.then():- it is used to execute

2.catch():-it is used to execute rejected state results.

3.finally():- once promise is settled it will print for both

4.async & await:

Async :- asnyc keyword converts synchronous function into asynchronous function and starts the promise

Await:- this keyword makes the function

Note: java script is by default “synchronous(single threaded)”.

Create – post

Read – get

Update – put

Delete - delete

**DOM:-**

* Full form: Document object model.
* It is a wed api used to manipulate the HTML content.
* It is used to add ,remove ,update the content in the HTML document.

DOM Methods:-

1.document.getElementById(“”); : - it is used to select he HTML element based on “id attribute“

Value.

2.document.getElementsByClassName(“”); : – it is used to select HTML element based on “class attribute “ value.

— with class attribute we can select multiple elements.

3.document.getElementsByTagName(“”); : – it is used to select HTML elements based on their tag names.

4.document.getElementsByName(“”); : – it is used to select HTML element based on “name attribute”.

* Below method used to select HTML element based on “CSS selectors”

5.document.querySelector(“”); : – this method is used to selsct only one element.

6.document.querySelectorAll(); : – this method is used to