**JavaScript**

**Variables in javascript**

Variables are containers for data (name = “haroon”) name is variable

**Variables Rules**

* Variables name are case sensitive “a” and “A” is different.
* Only letters, digits, underscore(\_) and $ are allowed. (not even space)
* Only a letters, underscore(\_) and $ should be 1st character.
* Reserved words cannot be variable names.

**Let, const and var (**these keyword are used to before variable name**)**

**Var:** Variable can be re-declared & updated. A global scope variable

**Let:** Variable cannot be re-declared but can be updated. A block scope variable

**Const:** Variable cannot be re-declared & updated. A block scope variable

**Data Types in javascript**

Data type are used to define the way the data is stored in memory.

**Null** empty value

**Number** set of digit like 0-9 NaN stand for “Not a Number”

**String** “I am learning javascript1” this is a string and string define singlecout and doublecout

**Symbol** A symbol is a datatype that can be used as an object property key.

**Boolean** true and false

**Bigint**

**Undefined** special value

**Object** collection of values (array, function) key : value

**Array** Array is a special type of object that is used to store a collection of elements.

**Operation in javascript**

Used to perform some operation on data a + b expression operator operands

**Arithmetic operator**

+, -, \*, /

* Modulus %
* Exponentiation \*\*

**Unary operator**

* Increment a++ a++(before), ++a(after)
* Decrement a-- a—(before), --a(after)

**Assignment operator**

**= += -= \*= /= %= \*\*=**

**Comparison operator**

Equal to **==** Equal to & type ===

Not equal to != Not equal to& type !==

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

**Logical operator**

Logical AND && Logical OR ||

|  |  |  |
| --- | --- | --- |
| X | Y | Z |
| T | T | T |
| T | F | F |
| F | T | F |
| F | F | F |

|  |  |  |
| --- | --- | --- |
| x | y | Z |
| T | T | T |
| T | F | T |
| F | T | T |
| F | F | F |

Logical NOT !

|  |  |
| --- | --- |
| X | Y |
| T | F |
| F | T |

**Ternary operator**

Condition ? true output : false output

Age > 18 ? console.log( “adult” ): console.log( “not adult” );

**Conditional Statement in javascript**

**If statement**

**let color;**

**if (mode === “dark-mode”){**

**color = “black”;**

**};**

**If else statement**

**let color;**

**if (mode === “dark-mode”){**

**color = “black”;**

**} else {**

**color = “white”;**

**}**

**Loops in javascript**

Loops are used to execute a piece of code again and again

**For Loop** (initional value; stop value; updation)

For (let = i; i <=5; i++){

Console.log(“Haroon Rasheed”);

}

**While Loop**

Let i = 1;

While (i <=5){

Console.log(“i = ”, i);

i++;

}

**Do while Loop**

Let i = 1;

Do{

Console.log(“i = ”, i)

i++;

}while (i <= 5);

**For of Loop** this loop is apply string and arrays

Let str = “Haroon Rasheed”;

**For(let** i of str**){**

Console.log(“i = ”, i);

**}**

**For in Loop** (this loop is apply objects)

**Arrays in javascript** array 🡪 mutable

Collection of items string 🡪 immutable

let players = ["Fakhar", "saim", "Riswan", "shaheen","Babar"]

let marks = [96,74,83,92,81]

let info = ["Haroon", 75,"Rasheed"]

console.log(players,marks,info)

console.log(typeof players,typeof marks);

**Array indices**

console.log(players[4])

players[1] = "Haris";

console.log(players)

**Looping over an Array**

Print all element of an array

let players = ["Fakhar", "saim", "Riswan", "shaheen","Babar"]

*for*(let i = 0; idx<players.length; i++){

    console.log(players[i]);

}

Array used for of loop

let citys = ["Lahore","Karachi","Islamabad","Faisalabad","Multan","Peshewar","Quetta"]

*for*(let city of citys){

    console.log(city.toUpperCase());

}

**Array Method**

**Push(): add to end**

let foodItems = ["apple","bannana","mango","orange"]

foodItems.push("litchi");

console.log(foodItems);

**Pop(): delete from end & return**

let foodItems = ["apple","bannana","mango","orange"]

foodItems.pop();

console.log(foodItems);

**toString(): converts array to string**

let foodItems = ["apple","bannana","mango","orange"]

console.log(foodItems);

console.log(foodItems.toString());

**concat(): joins multiple array & return result**

let batsman = ["Babar","Fakhar","Rizwan","shadab"]

let bolwer = ["shaheen","naseem","abrar"]

let player = batsman.concat(bolwer);

console.log(player);

**unshift(): add to start**

let marks = [67,87,93,72]

marks.unshift(77);

console.log(marks);

**shift(): delete from start & return**

let marks = [67,87,93,72]

marks.shift();

console.log(marks);

**slice(): returns a piece of array** slice(startidx, endidx)

let name = ["Haroon", "Maheen", "Kinza", "Awais", "Hafiz", "Hamza"]

console.log(name);

console.log(name.slice(1,3));

**splice(): change original array (add, remove, replace)** splice(startidx,delCount,newEl1…)

let num = [4,6,9,2,8,1,7,3]

num.splice(2,3,0);

console.log(num);

**Function in Javascript**

Block of code that perform a specific task, can be invoked whenever needed

function myFunction(){              *//this is function definition*

    console.log("I am learning javascript");

    console.log("allah please help me");

}

myFunction();                       *//and this is function call*

myFunction();

**function parameter**

function sum(*a*, *b*){ //function parameter 🡪 like local variable of

    console.log(*a* + *b*); function 🡪 block scope

}

sum(45, 54);