**1. Load the rest countries data using your html and script.js file and run a for loop on the data and print all the country name in the console.**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

  <script src="script.js"></script>

</body>

</html>

// create a request variable.

var request= new XMLHttpRequest();

//create a connection

request.open('GET','https://restcountries.eu/rest/v2/all',true);

//send the connection

request.send();

//register a event listener.once the data is ready loads the data

request.onload=function()

{

var countrydata=JSON.parse(this.response);

for(var i in countrydata)

{

    console.log(countrydata[i].name);

}

}

**Sample output**

**Afghanistan**

**script.js:13 Åland Islands**

**script.js:13 Albania**

**script.js:13 Algeria**

**script.js:13 American Samoa**

**script.js:13 Andorra**

**2. Difference between Copy By Value and Copy By Reference.**

**copy by value**.-Primitive datatypes (String, Number, Boolean, Null, Undefined)

var a=10;

var b=a;

console.log(b,a)// 10 10;

b=20;

console.log(b,a)// 20 10

1. just assigns the value
2. new memory space is allocated for variable b.
3. Thus the value of “a “ does not change when “b” is changed.

**copy by Reference-** Composite datatype-Objects,array.

var a=[1,2,3];// strats with index 0;

var b=a;

console.lof(b,a);//[1,2,3] [1,2,3] two array

b[0]=9;

console.log(b,a);//[9,2,3] [9,2,3]

//both the array gets changed if we change b value

1. here it does not create a new memory location it shares the location of "a".

**3.Copy By Value a composite datatype.**

* spread (...) operator
* Object.assign() method

The composite datatype takes copy by reference by default when copied which means it shares the memory location without creating new memory location.

var a=[1,2,3]

var b=a;

b[0]=8;

console.log(b,a);//copy by reference

 [8, 2, 3] (3) [8, 2, 3]//both changed

var c=[...a]//spread operator

undefined

c[0]=12;

12

console.log(c,a);//copy by value [12, 2, 3] (3) [8, 2, 3]

var d=[9,8,7]

var e=Object.assign([],d);

d[0]=10;

console.log(d,e);// [10, 8, 7] (3) [9, 8, 7]