1. How to compare two JSON have the same properties without order?

```
var obj1 = { name: "Person 1", age:5 };
var obj2 = { age:5, name: "Person 1" };
JSON.stringify(obj1) === JSON.stringify(obj2)
// false
_.isEqual(obj1, obj2)
// true
```

2. Use the rest countries API url -> https://restcountries.eu/rest/v2/all and display all the country flags in console.

```
const getcountries = () => {
    const xhr = new XMLHttpRequest();
    xhr.open("GET", "https://restcountries.com/v3.1/all");
    xhr.send();
    xhr.responseType = "json";
    xhr.onload = () =>{
        const countries = xhr.response;
        for( let country of countries)
        console.log("All countries", country.flags);
    };
};
getcountries();
```

3. Use the same rest countries and print all countries name, region, sub region and population

```
const getcountries = () => {
    const xhr = new XMLHttpRequest();
    xhr.open("GET", "https://restcountries.com/v3.1/all");
    xhr.send();
    xhr.responseType = "json";
    xhr.onload = () =>{
        const countries = xhr.response;
        for( let country of countries)
        console.log("All countries", country.name);
        for( let country of countries)
        console.log("All countries", country.region);
        for( let country of countries)
        console.log("All countries", country.subregion);
        for( let country of countries)
        console.log("All countries", country.population);

    };
};
getcountries();
```

How to get value of the variable myvar as output

```
var myvar = 1;
console.log("myvar", myvar); // 1
```

Declare variables to store your first name, last name, marital status, country and age in **multiple lines**

```
var a ={
firstname: "santhiya";
lastname: "K"
maritalstatus: "un married"
country: "india"
age:25
};
```

Declare variables to store your first name, last name, marital status, country and age in a single line

```
Const [firstname, lastname, marital status, country, age] = ["santhiya", "K", "un married", "india", 25]
```

Convert the string to integer

- parseInt()
- Number()
- Plus sign(+)

```
Var  a = parseInt("30")

Console.log(typeof a);  //30

Var a = +"30"

Console.log(typeof a); //30
```

Declare variables and assign string, boolean, undefined and null data types

```
let firstname = "naresh"; // string

let lastname ; // undefined
```

```
let isyoung = true; // Boolean

let trophy = null

    trophy = “some trophy” //null
```

Declare four variables without assigning values and print them in console

```
var a;

var b;

var  c;

var  d;
 console.log(a)     //undefined

console.log(b)     //undefined

console.log(c)     //undefined

console.log(d)     //undefined
```

Square of a number:

1. Use the Math.pow() Method to Square a Number in JavaScript
2. Use the Exponentiation Method to Square a Number in JavaScript ECMAScript 6
3. Use the bigInt() Library to Square a Number in JavaScript

Use the Math.pow() Method to Square a Number in JavaScript

One way to square a number in JavaScript is to use the pow() method from the Math library. The function takes two arguments: the first one is our target variable or value, and the second is the number of times we want to multiply it by itself. In case we want to square that number, we will send 2 as the second argument.

```
let squaredNumber = Math.pow(5,2);

console.log("5*5 = ",squaredNumber); // 5 * 5 => 25



let variable = 5 ;

let squaredNumber2 = Math.pow(variable,2);

console.log("5*5 = ",squaredNumber2); // 5 *5 => 25
```

Use the Exponentiation Method to Square a Number in JavaScript ECMAScript 6:

Another way to square a number in JavaScript ECMAScript 6 is to use the Exponentiation method. The method a ** b returns the same result as the Math.pow function. To square a number with ES6 Exponentiation, our equation would be a ** 2.

```
function squareMyNumber(no){

   return no ** 2

}

let squared = squareMyNumber(5);

console.log(" 5 ** 2 = ",squared);// 5**2 => 25
```

Swapping two numbers:

```
let a = 5, b = 6;
[a, b] = [b, a];
console.log(`${a} ${b}`);   // 6, 5
```

addition of 3 numbers:

```
function sum_three(nums){
  return nums[0] + nums[1] + nums[2];
}
console.log(sum_three([10, 32, 20])); // 62
console.log(sum_three([5, 7, 9]));  // 21
console.log(sum_three([0, 8, -11])); // -3
```

Celsius to Fahrenheit conversion :

```
function cToF(celsius)
{
  var cTemp = celsius;
  var cToFahr = cTemp * 9 / 5 + 32;
  var message = cTemp+'\xB0C is ' + cToFahr + ' \xB0F.';
    console.log(message);
}
cToF(60);
```

Meter to miles:

```
function getMiles(meters) {
    return meters*0.000621371192;
};
getMiles();
console.log(getMiles(1000));
```

Pounds to kg:

```
function getkg(pounds) {
    return pounds/2.2046;
};
getkg();
console.log(getkg(215)); // 97.52336024675678
```

Calculate five test scores and print their average:

```
var testscore = [ 40, 9, 80, 0, 30 ];
let sum = 0;
for ( let mark of testscore ) {
sum = sum + mark ;
}
Console.log(sum); //159

Let avg = sum/testscore.length ;
Console.log (avg); // 31.8
```

Power of any number x ^ y.

```
var b, e, r = 1, i = 1;

    // b = base
    // e = exponent
    // r = result
    // i = looping incremental

    b = 5;
    e = 4;

    // finding power of base value by equiping exponent value
    while(i <= e){
        r *= b;
        i++;
    }

    document.write("Result:: " + b + "^" + e + " = " + r )
```

//Result : 5^4 = 625.

Calculate Simple Interest:

```
  var p, t, r, SI;

  // p = principal
  // t = time
  // r = rate
  // SI = simple interest

  // Calculate simple interest
  p = 15;
  t = 12;
  r = 12;

  SI = (p * t * r) / 100;

  // Output
  document.write("Simple Interest = " + SI);

// Simple Interest = 21.6
```

Calculate area of an equilateral triangle:

```
let i,
a= 20.1
area = 1
for(i=1;i<=a;i++){

  area = (1.73*a*a)/4
  }
console.log(Math.round(area*100)/100)
```

output:
174.73

Area Of Isosceles Triangle:

```
  function pyramid(N){
    let result = "";
    for(let i = 1 ; i <= N ; i++) {
      for(j = N ; j > i ; j--) {
        result += " ";
      }
      for(j = 1 ; j<= i ; j++) {
        result += i + " ";
      }
      result += "\n";
    }
    return result;
  }
  console.log(pyramid(5));
```

output:

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

Volume Of Sphere

Finding the sphere volume with a given radius value:

Let's try to find the *volume* of a *sphere* with a *given* radius value. The value of the *radius* is given and this program will simply print the *volume of the sphere*.

```
let radius = 5;

let volume = (4/3)* Math.PI * Math.pow(radius, 3);

console.log('Volume of Sphere: '+volume.toFixed(2));
```

Here,

- *radius* is the given radius of the *sphere*.
- The *volume* is holding the volume of the *sphere*. It uses the same *formula* we discussed above to calculate the *volume*.
- Finally, the last line is printing this value. It is formatting it to *two digit* after the *decimal*.

If you run this program, it will print the below output:

```
Volume of Sphere: 523.60
```

Find area of a triangle.

```
var side1 = 5;
var side2 = 6;
var side3 = 7;
var s = (side1 + side2 + side3)/2;
var area =  Math.sqrt(s*((s-side1)*(s-side2)*(s-side3)));
console.log(area);
```

Output:
14.696938456699069

Given their radius of a circle and find its diameter, circumference and area.

```
 var r, d, c, a;
   r = 10;
   d = 2 * 10;
   c = 2 * 3.14 * 10;
   a = 3.14 * (10 * 10);

   console.log("Diameter = " + d + " units");
   console.log("Circumference = " + c + " units");
   console.log("Area = " + a + " sq. units");
```

Output:

Diameter = 20 units
Circumference = 62.800000000000004 units
Area = 314 sq. units

Given two numbers and perform all arithmetic operations.

```
var p, q;
    var sum, sub, mul, div, mod;
    p = 8;
    q = 6;

    /* Perform all arithmetic operations */
    sum = p + q;
    sub = p - q;
    mul = p * q;
    div = p / q;
    mod = p % q;

    /* Print result of all arithmetic operations */
   console.log("SUM " + p + " + " + q + " = " + sum );
   console.log("DIFFERENCE " + p + " - " + q + " = " + sub);
   console.log("PRODUCT " + p + " * " + q + " = " + mul );
   console.log("QUOTIENT " + p + " / " + q + " = " + div );
   console.log("MODULUS " + p + " % " + q + " = " + mod);
```

Output:

SUM 8 + 6 = 14
DIFFERENCE 8 - 6 = 2
PRODUCT 8 * 6 = 48
QUOTIENT 8 / 6 = 1.3333333333333333
MODULUS 8 % 6 = 2

Program To Calculate CGPA:

```
function CgpaCalc( marks, n)
{

    // Variable to store the grades in
    // every subject
    let grade = Array.from({length: n}, (_, i) => 0);

    // Variables to store CGPA and the
    // sum of all the grades
    let cgpa, sum = 0;

    // Computing the grades
    for(let i = 0; i < n; i++){
        grade[i] = (marks[i] / 10);
    }

    // Computing the sum of grades
    for(let i = 0; i < n; i++) {
        sum += grade[i];
    }

    // Computing the CGPA
    cgpa = sum / n;

    return cgpa;
}

// Driver Code

    let n = 5;
    let marks = [ 90, 80, 70, 80, 90 ];
    let cgpa = CgpaCalc(marks, n);

    console.log("CGPA = " + cgpa );
```

Output:

CGPA = 8.2

Write a loop that makes seven calls to console.log to output the following triangle:

```
var a = 7;
for ( i = 1; i<=7; i++) {
  console.log("#".repeat(i));
}
```

Output:

```
#
##
###
####
#####
######
#######
```