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

```js

let obj = {name : "person 1", age : 5};

let obj1 = {age : 5, name : "person 1"};

function isEqual(obj, obj1){

var objkeys = Object.keys(obj);

var obj1keys = Object.keys(obj1);

if (objkeys.length != obj1keys.length) {

return false;

}

for (var objkey of objkeys) {

if (obj[objkey] != obj1[objkey]) {

return false;

}

}

return true;

}

console.log(isEqual(obj, obj1));

```

\*\* \*\*

\*\*2.Use the rest countries API URL-->[https://restcountries.com/v3.1/all](https://restcountries.com/v3.1/all) and display all the countries flag in the console.\*\*

```js

var xhr = new XMLHttpRequest();

xhr.open('GET', '[https://restcountries.com/v3.1/all'](https://restcountries.com/v3.1/all'));

xhr.responseType = 'json';

xhr.send();

xhr.onload = function(){

var resObj = xhr.response;

for(var i = 0; i<resObj.length; i++){

//console.log(resObj[i].length);

console.log(resObj[i].flag);

}

}

```

\*\* \*\*

\*\*3.Use the same rest countries and print all the countries \*names\*, \*regions\*, \*sub-region\* and \*population\*.\*\*

```js

//countries names

var xhr = new XMLHttpRequest();

xhr.open('GET', '[https://restcountries.com/v3.1/all'](https://restcountries.com/v3.1/all'));

xhr.responseType = 'json';

xhr.send();

xhr.onload = function(){

var resObj = xhr.response;

for(var i = 0; i<resObj.length; i++){

console.log(resObj[i].name);

}

}

//countries region

var xhr = new XMLHttpRequest();

xhr.open('GET', '[https://restcountries.com/v3.1/all'](https://restcountries.com/v3.1/all'));

xhr.responseType = 'json';

xhr.send();

xhr.onload = function(){

var resObj = xhr.response;

for(var i = 0; i<resObj.length; i++){

console.log(resObj[i].region);

}

}

//countries sub-region

var xhr = new XMLHttpRequest();

xhr.open('GET', '[https://restcountries.com/v3.1/all'](https://restcountries.com/v3.1/all'));

xhr.responseType = 'json';

xhr.send();

xhr.onload = function(){

var resObj = xhr.response;

for(var i = 0; i<resObj.length; i++){

console.log(resObj[i].subregion);

}

}

//countries population

var xhr = new XMLHttpRequest();

xhr.open('GET', '[https://restcountries.com/v3.1/all'](https://restcountries.com/v3.1/all'));

xhr.responseType = 'json';

xhr.send();

xhr.onload = function(){

var resObj = xhr.response;

for(var i = 0; i<resObj.length; i++){

console.log(resObj[i].name.common);

console.log(resObj[i].population);

}

}

```

\*\*Question 4\*\*

\*\*task 1\*\*

\*\*1.Declare four variables without assigning values and print them in console\*\*

```js

var a;

var b;

var c;

var d;

console.log(a);

console.log(b);

console.log(c);

console.log(d);

```

\*\*2. How to get value of the variable myvar as output\*\*

```js

var myvar= 1;

console.log(myvar);

```

\*\*3. Declare variables to store your first name, last name, marital status, country and age in multiple lines\*\*

```js

var firstName = "John";

var lastName ="Vethamanickam";

var maritalStatus = "Unmarried";

var country = "India";

var age = 25;

console.log("My Firstname is "+ firstName);

console.log("My Lastname is "+ lastName);

console.log("My MaritalStatus is "+ maritalStatus);

console.log("My country is "+ country);

console.log("My age is "+ age);

```

\*\*4. Declare variables to store your first name, last name, marital status, country and age in a single line\*\*

```js

var firstName = "John", lastName ="Vethamanickam", maritalStatus = "Unmarried", country = "India", age = 25;

```

\*\*5.Declare variables and assign string, boolean, undefined and null data types\*\*

```js

var myName = "john";

var age = 25;

var married = false;

console.log("My Name is "+ myName);

console.log("I am "+ age+ " years old");

console.log(unmarried);

var a=null;

var b;

console.log(a);

console.log(b);

```

\*\*6.Convert the string to integer

i)parseInt\*\*

```js

var a=parseInt("10");

var b=parseInt("20");

console.log(a);

console.log(b);

console.log(parseInt("10.80"));

console.log(parseInt("10.00"));

console.log(parseInt("10.33")) ;

console.log(parseInt("34 45 66"));

console.log(parseInt(" 60 "));

console.log(parseInt("40 years"));

console.log(parseInt("He was 40"));

console.log(parseInt("10", 10));

console.log(parseInt("010"));

console.log(parseInt("10", 8));

console.log(parseInt("0x10"));

console.log(parseInt("10", 16));

```

\*\*ii)Number\*\*

```js

console.log(Number(true)); //For booleans, Number() returns 0 or 1.

console.log(Number(false));

// console.log(Number(new Date())); //For dates, Number() returns milliseconds since January 1, 1970 00:00:00

console.log(Number("999 888"));

console.log(Number([9,9]));

console.log(Number([9.9]));

```

\*\*iii)plus sign(+)\*\*

```js

const x = "10";

let y;

y = +x;//It converts a string into a number.

console.log(y);

console.log(typeof y);

console.log(+'');

console.log(+'hello');

```

\*\*7.Write 6 statement which provide truthy & falsey values\*\*

\*undefined ,

null ,

NaN ,

0 ,

"" (empty string), and

false\*

\*\*task 2\*\*

\*\*1.square of a number\*\*

```js

var a = 2;

var sq = a \* a;

console.log(sq);

```

\*\*2.swapping of two numbers\*\*

```js

var a = 10;

var b = 20;

[a,b] = [b, a];

console.log(a);

```

\*\*3,.addition of two numbers\*\*

```js

var a = 5;

var b = 3;

var c = 8;

var sum = a + b + c;

console.log(sum);

```

\*\*4. celcius to fahrenheit conversion\*\*

```js

var cel = 64;

var far = (cel \* 1.8) + 32;

console.log(cel + " " + "degree celcius is equal to" +" "+ far+ " "+ "degree fahrenheit");

```

\*\*5. Meter to miles\*\*

1 meter = 0.000621371 miles

```js

function convertMetersToMiles(meters) {

const miles = meters \* 0.000621371;

return miles;

}

const meters = 400;

const miles = convertMetersToMiles(meters);

console.log(meters + " " + "meters is equal to" +" "+ miles + " " + "miles");

```

\*\*6. Pounds to kg\*\*

1 pound = 0.453592 kilograms

```js

function convertPoundsToKilograms(pounds) {

const kilograms = pounds \* 0.453592;

return kilograms;

}

const pounds = 150;

const kilograms = convertPoundsToKilograms(pounds);

console.log(pounds + " " + "pounds is equals to"+" " +kilograms+" "+ " kilogram");

```

\*\*7. claculate batting average\*\*

```js

function calculateBattingAverage(runs, dismissals) {

const average = runs / dismissals;

return average.toFixed(2); // Return the average rounded to 2 decimal places

}

const runs = 345;

const dismissals = 15;

const battingAverage = calculateBattingAverage(runs, dismissals);

console.log(battingAverage); // Output: 23.00

```

\*\*8.Calculate five test scores and print their average\*\*

```js

var s1 = 88;

var s2 = 89;

var s3 = 96;

var s4 = 92;

var s5 = 98;

var sum = s1+s2+s3+s4+s5;

var average = sum/5;

console.log(`The average of 5 test score is ${average}`);

```

\*\*9.Power of any number x ^ y\*\*

```js

var x = 5;

var y = 3;

console.log(Math.pow(x, y));

```

\*\*10.Calculate Simple Interest\*\*

```js

var p = 3000;

var n = 1;

var r = 7;

var sI = (p\*n\*r)/100;

console.log(`The Simple Interest is ${sI}`);

```

\*\*11.Calculate area of an equilateral triangle\*\*

```js

var a=20;

var area = (1.73\*a\*a)/4;

console.log(`The area of equilateral triangle is ${area}`);

```

\*\*12.Area Of Isosceles Triangle\*\*

```js

var base = 10;

var height = 20;

var area = (base\*height)/2;

console.log(`The area of isosceles triangle is ${area}`);

```

\*\*13.Volume of Sphere\*\*

```js

var radius = 5;

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

volume = volume.toFixed(4);

console.log(`The volume of sphere is ${volume}`);

```

\*\*14.Volume Of Prism\*\*

```js

var l = 18;

var b = 12;

var h = 9;

volume = (l \* b \* h) / 2;

console.log(`The volume of triangular prism is ${volume}`);

```

\*\*15.Area of triangle\*\*

```js

var l = 10;

var b = 12;

var area = (l\*b)/2;

console.log(`The area of triangle is ${area}`);

```

\*\*16.Give the Actual cost and Sold cost, Calculate Discount Of Product\*\*

```js

var actual = 100;

var sold = 50;

var discount =((actual-sold)\*100)/actual;

console.log(`Discount of a product is ${discount}%`);

```

\*\*17.Given their radius of a circle and find its diameter, circumference and area.\*\*

```js

var r = 5;

var diameter = 2 \* r;

var circumference = 2 \* Math.PI \* r;

circumference = circumference.toFixed(3);

var area = Math.PI \* r \* r;

area = area.toFixed(4);

console.log(`The diameter of circle is ${diameter}`);

console.log(`The circumference of circle is ${circumference}`);

console.log(`The area of circle is ${area}`);

```

\*\*18.Given two numbers and perform all arithmetic operations\*\*

```js

//Addition

var a=10;

var b=2;

var x=a+b;

console.log(`Addition of ${a} and ${b} is ${x}`);

//subtraction

var y=a-b;

console.log(`subtraction of ${b} from ${a} is ${y}`);

//Multiply

var z =a\*b;

console.log(`Multiply of ${a} and ${b} is ${z}`);

//Division

var d=a/b;

console.log(`Division of ${a} by ${b} is ${d}`);

//Modulus

var m = a%b;

console.log(`Remainder is ${y}`);

//Exponentiation

console.log(a\*\*b);//a \*\* b produces the same result as Math.pow(a,b)

```

\*\*19.Display the asterisk pattern as shown below(No loop needed):

```js

var str = "\*\*\*\*\*\n\*\*\*\*\*\n\*\*\*\*\*\n\*\*\*\*\*\n\*\*\*\*\*";

console.log(str);

```

\*\*20.Calculate electricity bill? For example, a consumer consumes 100 watts per hour daily for one month. Calculate the total energy bill of that consumer if per unit rate is 10?\*\*

```js

var p=0.1;

var t=1;

var e=p\*t;

var emonth=30\*e;

var cost=10;

var bill=cost\*emonth;

console.log(`Total electricity bill per month is Rs.${bill}`);

```

\*\*21.Calculate CGPA\*\*

```js

var percentage=70;

var cgpa = percentage/9.5;

cgpa=cgpa.toFixed(1);

console.log(`${cgpa}CGPA`);

```

\*\* \*\*

\*\*task 3\*\*

\*\*1. Write a loop that makes seven calls to `console.log` to output the following triangle:\*\*

```js

let output = '';

for (let i = 1; i <= 7; i++) {

output += '#';

console.log(output);

}

```

\*\*2. write a code to count the elements in the array . Don’t use length property\*\*

```js

function countElements(arr) {

let count = 0;

for (let i = 0; myarr[i] !== undefined; i++) {

count++;

}

return count;

}

const myarr = [11, 22, 33, 44, 55];

const count = countElements(myarr);

console.log(count); // Output: 5

```

\*\*Arrays:\*\*

\*\*1. var myarray=[11,22,33,44,55]

write a code to count the elements in the array . Don’t use length property

Declare an empty array;

```js

var myarray = [11,22,33,44,55];

var count = 0;

for (var i in myarray) {

count++;

}

console.log(count);

```

\*\*2.Foods variable holds the names of your top 20 favorite foods, starting with the best food. How can you find your fifth favorite food?

let foods=[]

Find the length of your foods array

```js

let food = ["Fish Curry", "Fish Fry", "Chicken65", "Mutton Chukka", "Briyani", "Dhosa", "Chappathi", "Poori", "Parotta", "Naan", "Idly", "Paneer", "Gopi65", "Maggie", "Sambar", "Dry Fish", "Aviyal", "Rasam", "Idiyappam", "Appam"]

console.log(food.length);

//find your fifth favorite food

console.log(food[4]);

```

\*\*3Starting from the existing friends variable below, change the element that is currently “Mari” to “Munnabai”.

let friends = [

“Mari”,

“MaryJane”,

“CaptianAmerica”,

“Munnabai”,

“Jeff”,

“AAK chandran”

];

function dataHandling(input){

for (var i = 0; i < input.length; i++) {

}

}

dataHandling(friends);.

```js

let friends = ["Mari","MaryJane","CaptianAmerica","Munnabai","Jeff","AAK chandran"];

function dataHandling(input){

var index = input.indexOf("Mari");

input[index] = "Munnabai";

console.log(input);

}

dataHandling(friends);

```

\*\*4. tarting from the friends variable below, Loop and Print the names till you meet CaptianAmerica.

const friends = [

“Mari”,

“MaryJane”,

“CaptianAmerica”,

“Munnabai”,

“Jeff”,

“AAK chandran”

];

function dataHandling(input){

for (var i = 0; i < input.length; i++) {

}

}

dataHandling(friends);

```js

let friends = ["Mari","MaryJane","CaptianAmerica","Munnabai","Jeff","AAK chandran"];

function dataHandling(input){

for (var i = 0; i < input.length; i++){

console.log(input[i]);

if(input[i] === "CaptianAmerica"){

break;

}

}

}

dataHandling(friends);

```

\*\*5. Find the person is ur friend or not.

const friends = [

“Mari”,

“MaryJane”,

“CaptianAmerica”,

“Munnabai”,

“Jeff”,

“AAK chandran”

];

function dataHandling(input, name){

for (var i = 0; i < input.length; i++) {

}

}

let found = dataHandling(friends,”Jeff”);

console.log(found);

```js

let friends = ["Mari","MaryJane","CaptianAmerica","Munnabai","Jeff","AAK chandran"];

function dataHandling(input, fr){

for(var i = 0; i< input.length;i++){

if(input[i] === fr){

return true;

}

}

return false;

}

let found = dataHandling(friends, "Mari");

console.log(found);

```

\*\*6.We have two lists of friends below. Use array methods to combine them into one alphabetically-sorted list.

var friends1 = [

“Mari”,

“MaryJane”,

“CaptianAmerica”,

“Munnabai”,

“Jeff”,

“AAK chandran”

];

var friends2 = [

“Gabbar”,

“Rajinikanth”,

“Mass”,

“Spiderman”,

“Jeff”,

“ET”

];

function dataHandling(input){

//Your code goes here

}

dataHandling(friends);

```js

let friends1 = ["Mari","MaryJane","CaptianAmerica","Munnabai","Jeff","AAK chandran"];

var friends2 = ["Gabbar","Rajinikanth","Mass",

"Spiderman","Jeff","ET"];

function dataHandling(input){

var combine = input[0].concat(input[1]);

combine.sort();

return combine;

}

var sortedFriends = dataHandling([friends1,friends2]);

console.log(sortedFriends);

```

\*\*1.Get the first item, the middle item and the last item of the array\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

//first item

console.log(friends[0]);

//last item

last = friends.length - 1;

console.log(friends[last]);

//middle item

var middle = friends[Math.floor(friends.length / 2)];

console.log(middle);

```

\*\*2. Add your name to the end of the friends array, and add another name to beginning.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

//add at end

friends.push("Nivetha");

console.log(friends);

//add at beginning

friends.unshift("Balaji");

console.log(friends);

```

\*\*3.Add Mr or Ms to the names in the friends array.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

const modify =friends.map(name=>`Mr.${name}`);

console.log(friends);

console.log(modify);

```

\*\*4. Concat all the names the friends array and return as comma “,” seperated string.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

let j=friends.join();

console.log(j);

```

\*\*5. Find the friends names who has letter ‘a’ and return the list.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

for(var i = 0; i < friends.length; i++)

{

if(friends[i].indexOf('a') != -1)

{

console.log(friends[i]);

}

}

```

\*\*6.Find the avg length of all the friends names. Get the individual length of the names and do the avg.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

avg = friends.join('').length / friends.length;

console.log(avg);

```

\*\*7. Find the names and return the list starting with letter M.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

for(var i = 0; i < friends.length; i++)

{

if(friends[i].startsWith("M") == true)

{

console.log(friends[i]);

}

}

```

\*\*8. Find the name with max characters and return the name.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

var lgth = 0;

var longest;

for (var i = 0; i < friends.length; i++) {

if (friends[i].length > lgth) {

var lgth = friends[i].length;

longest = friends[i];

}

}

```

\*\*9. Find the name with min characters and return the name.\*\*

```js

let friends = ["Mari", "MaryJane", "CaptianAmerica", "Munnabai", "Jeff", "AAK chandran"];

console.log(

friends.reduce((a, b) => a.length <= b.length ? a : b)

)

```

\*\*1. Find the average in the array below.

Make sure you add only the numbers and do avg.

const friendsInfo = [6, 12, ‘Mari’, 1, true, ‘Munnabai’, ‘200’, ‘CaptianAmerica’, 8, 10];

```js

const friendsInfo = [6, 12, "Mari", 1, true, "Munnabai", "200", "CaptianAmerica", 8, 10];

const numbers =friendsInfo.filter(value => typeof value === number);

let sum = numbers.reduce((a, b) => a + b);

let res = sum/numbers.length;

console.log(res);

```

\*\*2. Print the contents of the input variable

var input = [

[“0001”, “Roman Alamsyah”, “Bandar Lampung”, “21/05/1989”, “Membaca”],

[“0002”, “Dika Sembiring”, “Medan”, “10/10/1992”, “Bermain Gitar”],

[“0003”, “Winona”, “Ambon”, “25/12/1965”, “Memasak”],

[“0004”, “Bintang Senjaya”, “Martapura”, “6/4/1970”, “Berkebun”]

]

function dataHandling(input){

for (var i = 0; i < input.length; i++) {

//Your code goes here

}

}

dataHandling(input);

```js

var input = [

["0001", "Roman Alamsyah", "Bandar Lampung", "21/05/1989", "Membaca"],

["0002", "Dika Sembiring", "Medan", "10/10/1992", "Bermain Gitar"],

["0003", "Winona", "Ambon", "25/12/1965", "Memasak"],

["0004", "Bintang Senjaya", "Martapura", "6/4/1970", "Berkebun"]

]

function dataHandling(input){

for (var i = 0; i < input.length; i++) {

var x = input[i];

var roll = x[0];

var name = x[1];

var city = x[2];

var dob = x[3];

var hobby = x[4];

console.log("Roll NO : " + roll)

console.log("Name : " + name)

console.log("City : " + city)

console.log("DOB : " + " "+ dob)

console.log("Hobby : " + hobby)

console.log();

}

}

dataHandling(input);

```

\*\*3.Add a new key value pair to myobject

key : ten

value : ten

```js

myobject = {1:"one","11":1,"name":"arun"}

myobject["ten"] = "ten";

console.log(myobject);

```

\*\*4. Write out an object literal to represent the data below.

Guvi, Geek, 6, IIT-M RP,Chennai.

```js

var addr= {

Name : "guvi, geek",

location : "6, IIT-M RP,Chennai"

};

console.log(addr);

```

\*\*5. How would you represent the following data using a combination of object literals and arrays? (You can describe a strategy without typing or writing out the whole thing.)

Guvi, Geek, 6, IIT-M RP,Chennai.

Amazon, Inc, 31, SP Infocity, Chennai.

Google, Alphabet, 34 Amphitheater Parkway, MountainView.

Tesla, Inc , 32, 333 Santana Row,San Jose.

```js

var addr=[{

Name : "guvi, geek",

location : "6, IIT-M RP,Chennai"

},

{

Name : "Amazon, Inc",

location : "31, SP Infocity, Chennai."

},

{

Name : "Google, Alphabet",

location : "34 Amphitheater Parkway, MountainView."

},

{

Name : "Tesla, Inc ",

location : "32, 333 Santana Row,San Jose."

}

];

console.log(addr);

```