**Day4-XML-HTTP-REQUEST**

**//Javascript - Day -4 : What is XMLHTTPRequest? & scope**

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

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

**//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" };

// we are passing 2 objects to compareObject method

let compareObject = (obj1, obj2) => {

//key1 will have array of keys of obj 1 eg [name, age]

key1 = Object.keys(obj1);

//key2 will have array of keys of obj 2 eg [name, age]

key2 = Object.keys(obj2);

// we are checking both keys length are same or not if same and keys value are same in both objects if both are true we will return true

return (

key1.length === key2.length &&

Object.keys(obj1).every((key) => obj1[key] === obj2[key])

);

};

console.log(compareObject(obj1, obj2));

**OUTPUT:**



//Xml http request are used to interact with servers

**//Create XMLHttpRequest()**

var xhr = new XMLHttpRequest();

let url = "https://restcountries.eu/rest/v2/all";

xhr.open("GET", url);

//Onoad listner to process completed request

xhr.onload = function () {

if(xhr.status === 200 && xhr.readyState == 4)

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

console.log(responseData);

let nameArray= [];

let regionArray = [];

let subregionArray = [];

let flagArray = [];

let populationArray = [];

for(let data of responseData){

flagArray.push(data.flag);

nameArray.push(data.name);

regionArray.push(data.region);

subregionArray.push(data.subregion);

populationArray.push(data.population);

}

console.log(“FLAGS”,flagArray);

**OUTPUT:**



console.log('Names : ' +nameArray + "\n ",

'Region : '+regionArray + "\n ",

'Sub-region : '+subregionArray + "\n ",

'Population : '+populationArray + "\n ");

};

**OUTPUT:-** 



xhr.onerror = function () {

console.log("Error", this.statusText);

};

//Send request to the server

xhr.send();

**4)**[**https://medium.com/@reach2arunprakash/www-guvi-io-zen-d395deec1373**](https://medium.com/@reach2arunprakash/www-guvi-io-zen-d395deec1373)

**Task 1: Simple Programs todo for variables**

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

let first\_Name;

let last\_Name;

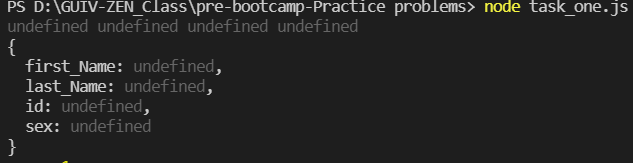
let id;

let sex;

console.log(first\_Name, last\_Name, id, sex);

console.log({ first\_Name, last\_Name, id, sex });

**OUTPUT:**



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

**OUTPUT:**



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

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

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

//3

let firstName;

let lastName;

let maritalStatus;

let country;

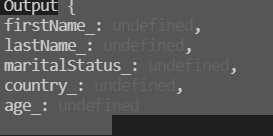
let age;

//4

let firstName\_, lastName\_, maritalStatus\_, country\_, age\_;

console.log({ firstName\_, lastName\_, maritalStatus\_, country\_, age\_ });

**OUTPUT:**



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

let name\_f = "vismaya";

let married = true;

let allergic;

let phNumber = null;

console.log("Print", typeof (name\_f),

typeof (married),

typeof (allergic),

typeof (phNumber));

**OUTPUT:**



//6.Convert the string to integer

let strToCheck = "123456789";

let str1 = parseInt(strToCheck);

let str2 = Number(strToCheck);

let str3 = +strToCheck;

console.log('Convert String to Integer ' + str1, str2, str3);

**OUTPUT:**



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

//null undefined NAN false "" 0

let today;

let quote = "";

let number = 0;

let emptyobj = {};

let emptyArray = [];

let negativeNum = -5;

if (!today && !quote && number === 0) {

console.log("No value for today", quote, today, number);

} else {

console.log("See the values in today" + today);

}

//truthy empty {},[] -no

if (emptyArray || emptyobj || negativeNum) {

console.log("Truthy", emptyobj, emptyArray, negativeNum)

} else {

console.log("Falsy..");

}

**OUTPUT:**



**Task 2: Simple Programs todo for Operators**

**Square of a number**

function squareOfNumber(a){

let square = a \* a;

console.log('Square : '+square);

return square;

}

squareOfNumber(6);

squareOfNumber(9);

**OUTPUT:**



**Swapping 2 numbers**

let a = 2;

let b = 4; let c;

console.log(' Before Swapping a : ', a + ' b: ',b);

c = a;// c = 2

a = b;// a= 4

b = c;// b = 2

**console.log(' After Swapping a : ' ,a + ' b: ',b);**

**OUTPUT:**



**Addition of 3 numbers**

let num1 = 10, num2 = 20, num3 = 30;

let sum = num1 + num2 + num3;

console.log("Final Sum : " +sum);

**OUTPUT:**



**Celsius to Fahrenheit conversion**

// (0°C × 9/5) + 32 = 32°F

function cToF(c){

let farenhiet = (c \* (9/5)) + 32;

console.log('Farenhiet : '+farenhiet);

return farenhiet;

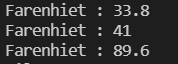
}

cToF(1);

cToF(5);

cToF(32);

**OUTPUT:**



**Meter to miles**

function meterToMiles(m){

//i meter = 0.000621371 miles

let miles = 0.000621371 \* m;

console.log('Miles : '+miles);

return miles;

}

meterToMiles(10);

meterToMiles(7);

**OUTPUT:**



**Pounds to kg**

function poundToKg(pound){

//1 pound = .45kg

let kg = pound \* 0.45;

console.log('Pound : '+kg);

return kg;

}

poundToKg(4);

**OUTPUT:**



**Calculate Batting Average**

/\*\*Batting Average is Runs Scored / Number of dismisals

\* No of dismisals = matches - not out

\*

\*/

function BattingAverage(runs,matches,notOut){

let dismisals = matches - notOut;

if(dismisals === 0) return -1;

let avg = runs / dismisals;

return avg;

}

console.log('Batting Average is Runs Scored',BattingAverage(10000,250,50))

**OUTPUT:**



**Calculate five test scores and print their average**

function Average(){

let n = 5 ,n1 =50,n2= 49,n3 =50, n4 =49,n5 = 50;

//sum of all numbers divide by total numbers

let total = (n1 + n2 + n3 + n4 + n5)/n;

console.log('Total : '+total);

}

**Average();**

**OUTPUT:**



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

function exponent(x,y){

let power = Math.pow(x,y);

console.log('Power : ',power);

}

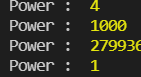
exponent(2,2);

exponent(10,3);

exponent(6,7);

exponent(-1,2);

**OUTPUT:**



**Calculate Simple Interest**

/SI = (P \* T \* R) / 100

let p = 7500 , t = 5 , r = 10;

let simpleIntrest = (p \* t \* r)/100;

console.log("Simple Intrest : "+simpleIntrest);

**OUTPUT:**



**Calculate area of an equilateral triangle**

function equilateralArea(a){

//area = .43 \* a \* a

let findSquare = (0.43 \*a \* a);

console.log("equilateralArea : "+findSquare);

return findSquare;

}

equilateralArea(5);

equilateralArea(3);

**OUTPUT:**



**Area Of Isosceles Triangle**

function isocelesTriangleArea(b,h){

//area = .5 \* b \* h

let isoceles = 0.5 \* b \* h;

console.log('Isoceles Area : '+isoceles);

return isoceles ;

}

isocelesTriangleArea(5,10);

**OUTPUT:**



**Volume Of Sphere**

function volumeOfSphere(rad){

//Volume = 4/3 \* 3.13 \* R \* R \*R

let sphereVol =(4.0/3.0) \* Math.PI \* Math.pow(rad,3);

console.log('Sphere VOlume : '+sphereVol);

return sphereVol;

}

volumeOfSphere(3);

**OUTPUT**



**Volume Of Prism**

function volumeOfPrisml(l,b,h){

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

console.log("Volume of Prism : "+volume);

return volume;

}

volumeOfPrisml(4,5,6);

**OUTPUT:**



**Find area of a triangle.**

function triangleArea(s){

let side1 =10 ,side2 = 15,side3 = 20;

const areaValue = Math.sqrt(

s \* (s - side1) \* (s - side2) \* (s - side3)

);

console.log('Area : '+areaValue);

};

triangleArea(100);

**OUTPUT:**



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

function discountProduct(actual,sold){

let discount = actual - sold;

console.log("Discount : "+discount);

return discount;

}

discountProduct(100,90);

**OUTPUT**



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

function circle(radius){

//Apply the equations

//2 \* radius

let diameter = 2 \* radius;

//2 \* 3.14 \* radius

let circumference = Math.PI \* 2 \* radius;

//3.14 \* radius \* radius

let area = Math.PI \* (radius \* radius);

let Final = {diameter , circumference ,area};

console.log('FINAL : '+JSON.stringify(Final));

return Final;

}

circle(2);

**OUTPUT:**



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

function arithmeticOperations(a,b){

//add

let sum = a + b;

//minus

let sub = a - b;

let mul = a \* b;

let division = a / b;

let result = { sum , sub, mul ,division};

//convert object object to string form to see the output

console.log("Result : "+JSON.stringify(result));

return result;

}

arithmeticOperations(34,5);

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

**\*\*\*\*\***

**\*\*\*\*\***

**\*\*\*\*\***

\*\*\*\*\*

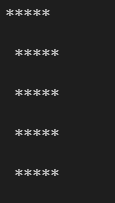
\*\*\*\*\*

let n = 5;

let starPattern = '\*'.repeat(n);

console.log( starPattern +"\n" +"\n",starPattern +"\n" +"\n",starPattern +"\n" +"\n",starPattern +"\n" +"\n",starPattern +"\n" +"\n");

**OUTPUT:**



**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?**

function calculateElectercityBill(watts,rate){

let totalKiloWatt = watts \* 30 \* 24;

let totalConsumption = totalKiloWatt / 1000 ;

let eBill = totalConsumption \* rate;

console.log("Electercity Bill : " +eBill);

return eBill;

}

calculateElectercityBill(100,10);

**OUTPUT:**



**Program To Calculate CGPA**

function cgpaCalcutator(s1,s2,s3,s4,s5,n){

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

let total = sum / n;

console.log("Total : "+total \* 9.5);

}

cgpaCalcutator(9,9,9,9,8,5);

**OUTPUT:**



**Task 3: Simple Programs todo for Condition , Looping and Arrays**

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

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

console.log('#'.repeat(i))

}

**OUTPUT:**



1. **Iterate through the string array and print it contents**

var strArray = ["<option>Jazz</option>",

"<option>Blues</option>",

"<option>New Age</option>",

"<option>Classical</option>",

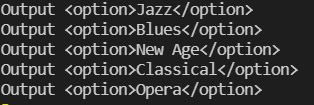
"<option>Opera</option>"];

for (let i = 0; i < strArray.length; i++) {

console.log("Output " + strArray[i]);

}

**OUTPUT:**



**Arrays:**

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

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

let new\_Data = [1, 2, 3];

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

function arrayLength(a) {

let len = 0;

while (a[len]) {

len++;

}

return len;

}

console.log('Len of element wo .length property',arrayLength(new\_Data));

console.log('Len of element wo .length property',arrayLength(myarray));

**OUTPUT:**



**Declare an empty array;  
— — — — — — — — — — — — — — -  
Create an array called foods holds the names of your top 20 favorite foods, starting with the best food.**

**let foods=[]**

**— — — — — — — — — — — — — — — -  
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**

let foods = ["Apple",

"Orange",

"PineApple",

"Chicken",

"Chilly", "Chocolates", "MAggie",

"Biriyani", "Sweet Potatoes", "Mangoes", "Broccoli", "Wild Salmon", "Oatmeal", "Watermelon", "Butternut Squash",

"Berries", "Eggs", "Broccoli", "Spinach", "Tea"

];

console.log("fifth food", foods[4]);

console.log("Length food", foods.length);

**OUTPUT:**



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

**let friends = [  
“Mari”,  
“MaryJane”,  
“CaptianAmerica”,  
“Munnabai”,  
“Jeff”,  
“AAK chandran”  
];**

const friends = [

"Mari",

"MaryJane",

"CaptianAmerica",

"Munnabai",

"Jeff",

"AAK chandran"

];

friends[0] = "Munnabai";

console.log("Check NAme got Updated or not : " + friends[0]);

**OUTPUT:**



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

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

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

break;

}

console.log("Names Still Captian America : " + friends[i]);

}

**OUTPUT:**



**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);**

**— — — — — — — — — — — — — — — -**

**Get the first item, the middle item and the last item of the array**

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

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

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

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

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

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

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

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

**Find the average in the array below.  
Make sure you add only the numbers and do avg.**

function dataHandling(input, friend, friends1, friends2) {

let middleItem = 0;

//combine two arrays in to one array using spread

let allFriends = [...friends1, ...friends2];

//.length will help to find the total count

let totalCount = allFriends.length;

//1).sort() will give sorted list

console.log("Sorted Friend List Friends :" + allFriends.sort());

console.log("Total Friends :" + totalCount);

//1)arr[0] will return the first element

console.log("First Item" + allFriends[0]);

//1)arr[array.length - 1 ] gives the last elem of the array

console.log("Last Item" + allFriends[allFriends.length - 1]);

//1)Middle Item"

//To find middle element of even length items we will use math.round of total array length by 2

if (totalCount % 2 === 0) {

middleItem = Math.round(totalCount / 2);

console.log("Middle Item" + allFriends[middleItem]);

} else {

//To find middle element of odd length items we will use math.round of total array length by 2

middleItem = Math.floor(totalCount / 2);

console.log("Middle Item" + allFriends[middleItem]);

}

//Adding my name to the end of the array

allFriends.push("Vismaya Wilson");

console.log("Add my name to End of Array ", allFriends);

//Add another name to the start of the array

allFriends.unshift(" Ebin Sunny");

console.log("Add another name to Begining of Array ", allFriends);

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

let name\_With\_M = allFriends.filter((name) => {

return name.charAt(0) === "M" || name.charAt(0) === "m";

});

console.log("Name starts with M", name\_With\_M);

var regExp = /[a,A]/g;

//creating copy of an array using spread operator

let copyArray = [...allFriends];

let newArray = [];

let lenArray = [];

let newObject = {};

let nameWithA = [];

let arrayWithInitials = [];

for (let i = 0; i < copyArray.length; i++) {

//Appending Mr to each element of the array

copyArray[i] = "Mr." + copyArray[i];

//Push all the elements in to adday

arrayWithInitials.push(copyArray[i]);

if (regExp.test(copyArray[i])) {

//names which have a will be pushed to array

nameWithA.push(copyArray[i]);

}

lenArray.push(copyArray[i].length);

newArray.push(copyArray[i]);

}

console.log("Names which have a / A in it " + nameWithA);

console.log("MR details Array", arrayWithInitials);

newObject = { length: lenArray, value: newArray };

//8. Find the name with max characters and return the name.

//find maximum using the .max and creating copy via spread operator

let maximum = Math.max(...lenArray);

console.log("Maximum", maximum);

//identify the indexOf the maximumElement using indexOF

let indexOfmax = lenArray.indexOf(maximum);

console.log("Index of Max" + indexOfmax);

//with identified index find the largest number

let largeName = newArray[indexOfmax];

console.log("Larger Name" + largeName);

//9. Find the name with min characters and return the name.

let minimum = Math.min(...lenArray);

console.log("Minimum", minimum);

//identify the indexOf the minimum Element using indexOf

let indexOfmin = lenArray.indexOf(minimum);

let smallName = newArray[indexOfmin];

////with identified index find the largest number

console.log("Smaller Name" + smallName);

//OR

//6: Average

let sum = 0;

let k = 0;

while (lenArray[k]) {

sum = sum + lenArray[k];

k++;

}

let average = sum / k;

console.log("Average:" + average);

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

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

console.log("My Friend");

} else {

console.log("Not my friend");

}

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

input[i] = "Munnabai";

}

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

break;

}

}

}

let found = dataHandling(friends, "Jeff", friends1, friends2);

console.log("Find Friend " + found);

**OUTPUT:**





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

const friendsInfo = [

6,

12,

"Mar",

1,

true,

"Munnabai",

"200",

"CaptianAmerica",

8,

10,

];

//Create a copy of original array using spread

let acceptNumber = [...friendsInfo];

let add = 0;

//to perform addition initialize value with 0

let filterArray = friendsInfo.filter((num) => {

//filter the numbers from the array and return the array with number elements

if (typeof num === "number") return num;

});

//find loatal tength of the Array

let filterArrayLength = filterArray.length;

for (let i of filterArray) {

add = add + i;

//to add , add the each elements in the array

}

//Find the average total sum by no of elements

let average = add / filterArrayLength;

console.log("ADD :" + add);

console.log("AVERAGE :", average);

**OUTPUT:**



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 dataHandling2(input) {

//loop over the outer array

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

//loop over the each row elements

for (k = 0; k < input[i].length; k++) {

console.log("PRINT ALL INNER Values", input[i][k]);

} }

}

dataHandling2(input);

**OUTPUT:**

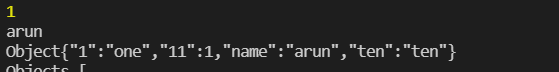


What the output

myobject = {1:one,”11":1,”name”:”arun”}console.log(myobject.11);   
console.log(myobject.name);

Add a new key value pair to myobject  
key : ten  
value : ten

**OUTPUT:**



Write out an object literal to represent the data below.

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

— — — — — — — — — — — — — — — -

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.

let learning = [

{

class: "GVUVI",

suffix: "GEEK",

id: 6,

address: "IIT-M RP",

location: "Chennai",

},

{

class: "Amazon",

suffix: "Inc",

id: 31,

address: "SP Infocity",

location: "Chennai",

},

{

class: "Google",

suffix: "Alphabet",

id: 34,

address: "Amphitheater Parkway",

location: "MountainView",

},

{

class: "Tesla",

suffix: "Inc",

id: 32,

address: "333 Santana Row",

location: "San Jose",

},

];

console.log("Objects", learning);

**OUTPUT:**

