**JavaScript Assignment 11**

**1. Write a JavaScript program to take an array as input from the user and calculate the sum of numbers in odd places and the sum of numbers at even places.**

**a) Print the difference between the two sums**

**b) Print the number of elements in odd places**

**c) Print the number of elements in even places**

**d) Print the average of all elements in the array**

**e) Print GCD of Sum of Numbers at Odd Places and Sum of Numbers at Even Places**

**Sample Input:**

**[ 1, 2, 3, 4, 5 ]**

**Explanation:**

**Sum of Numbers at Odd Places = 1 + 3 + 5 = 9**

**Sum of Numbers at Even Places = 2 + 4 = 6**

**Difference = 9 - 6 = 3**

**Sample Output:**

**Difference = 3**

**Odd Elements = 3**

**Even Elements = 2**

**Average = 3**

**GCD = 3**

function sumOddEven(arr) {

    const Odd = arr.filter(odd => odd%2 == 1)

    const Even = arr.filter(even => even%2 == 0)

    console.log(Odd, Even);

    const oddsum = Odd.reduce(function(accu, value) {

        return accu + value;

    });

    console.log(oddsum);

    const evensum = Even.reduce(function(accu, value) {

        return accu + value;

    });

    console.log(evensum);

/\* the Difference between the two sums: \*/

    var diff = oddsum - evensum;

    console.log(`Difference = ${diff}`);

/\*  Print the number of elements in odd places

    Print the number of elements in even places \*/

    var numOdd = Odd.length;

    var numEven = Even.length;

    console.log(`Odd elements = ${numOdd}`);

    console.log(`Even elemets = ${numEven}`);

/\* average of all elements in the array \*/

    var avg = (oddsum + evensum) /2;

    console.log(`Average = ${avg}`);

/\* GCD of Sum of Numbers at Odd Places and Sum of Numbers at Even Places \*/

    var gcd;

    for (let i = 2; i < Math.max(evensum, oddsum); i++) {

        if(oddsum % i == 0 && evensum%i ==0) {

            gcd = i;

            console.log(`GCD = ${gcd}`);

        }

    }

}

/\* taking array as input \*/

const prompt = require('prompt-sync')({sigint : true});

const num = prompt('Enter the number of elements to be in array');

const array =[];

for(let i = 0; i < num; i++) {

    const element = prompt('Enter the elements in array');

    array.push(element);

}

console.log(array);

sumOddEven(array);

**2. Write a JavaScript program to take 2 arrays from the user and check if the number 4 exists in any of the arrays, or both of the arrays.**

**Sample Input 1:**

**[ 1, 2, 3, 4, 5 ]**

**[ 4, 6, 1, 8, 2 ]**

**Output:**

**4 in both arrays**

**Sample Input 2:**

**[ 1, 2, 3, 6, 5 ]**

**[ 4, 6, 1, 8, 2 ]**

**Output:**

**4 in array 2**

**Sample Input 3:**

**[ 1, 2, 3, 4, 5 ]**

**[ 5, 6, 1, 8, 2 ]**

**Output:**

**4 in array 1**

const prompt = require('prompt-sync')({sigint: true});

function inputArr() {

    const arr = []

    for(let i =0;i<5 ;i++) {

        const element = prompt('Enter the array elements: ');

        const full = arr.push(parseInt(element));

    }

    return arr;

}

/\* func call \*/

console.log('Enter elements for array 1');

const arr1 = inputArr();

console.log(arr1);

console.log('Enter elements for array 2');

const arr2 = inputArr();

console.log(arr2);

var set1 = new Set(arr1);

var has4inarr1 = set1.has(4);

var set2 =  new Set(arr2);

var has4inarr2 = set2.has(4);

if(has4inarr1 == 1 && has4inarr2 == 1){

    console.log('4 in both array');

}

else if(has4inarr1 == 1){

    console.log('4 in arr 1');

}

else if(has4inarr2 == 1) {

    console.log('4 in arr2');

}

else {

    console.log('4 not in both array');

}

**Output:**

PS C:\Users\ADMIN\Documents\c\JS\_CODE> node demo.js

Enter elements for array 1

Enter the array elements: 3

Enter the array elements: 5

Enter the array elements: 76

Enter the array elements: 4

Enter the array elements: 3

[ 3, 5, 76, 4, 3 ]

Enter elements for array 2

Enter the array elements: 4

Enter the array elements: 6

Enter the array elements: 3

Enter the array elements: 7

Enter the array elements: 2

[ 4, 6, 3, 7, 2 ]

4 in both array

**3. Write a JavaScript program to flatten the array, ie, turns a deep array into a plain array.**

**Note: Do not use array.flat();**

**Sample Input:**

**[ 1, 2, [ 3, 4, [ 5 ] ] ]**

**Output:**

**[ 1, 2, 3, 4, 5 ]**

function\* flatten(array, depth) {

    if (depth === undefined) {

      depth = 1;

    }

    for (const item of array) {

      if (Array.isArray(item) && depth > 0) {

        yield\* flatten(item, depth - 1);

      } else {

        yield item;

      }

    }

}

  const arr = [1, 2, [3, 4, [5]]];

  const flattened = [...flatten(arr, Infinity)];

  console.log(flattened);

**Output:**

**PS C:\Users\ADMIN\Documents\c\JS\_CODE> node demo.js**

**[ 1, 2, 3, 4, 5]**

**4. Write a JavaScript program to take an array as input from the user and:**

**a) Store all duplicate elements in a separate array**

**b) Remove the duplicate elements from the original array**

**Sample Input:**

**[ 1, 2, 3, 2, 3, 4, 5 ]**

**Output:**

**Duplicate Elements = [ 2, 3 ]**

**Array without duplicate elements = [ 1, 2, 3, 4, 5 ]**

const prompt = require('prompt-sync')({sigint: true});

function inputArr() {

    const arr = []

    const len = prompt('how many eleemnts to store in array : ');

    for(let i =0; i< len ;i++) {

        const element = prompt('Enter the array elements: ');

        const full = arr.push(parseInt(element));

    }

    return arr;

}

const arr = inputArr();

const duplicate = arr.filter( (item, index) => {

    return arr.indexOf(item) !== index;

});

const removedDuplicate = arr.filter( (item, index) => {

    return arr.indexOf(item) === index;

});

console.log(`duplicate : ${duplicate}`);

/\*const removedDuplicate = [];

arr.forEach( (i) => {

    if(!removedDuplicate.includes(i)) {

        removedDuplicate.push(i);

    }

});\*/

console.log(`after removal of duplicates : ${removedDuplicate}`);

**Output:**

how many eleemnts to store in array : 5

Enter the array elements: 2

Enter the array elements: 4

Enter the array elements: 4

Enter the array elements: 3

Enter the array elements: 6

duplicate : [ 4 ]

after removal of duplicates : [ 2, 4, 3, 6 ]

**5. Debug the given JavaScript program and execute the correct code**

**function thirdLargest(arr, arr\_size)**

**{**

**/\* There should be at least three elements \*/**

**if (arr\_size < 3)**

**{**

**document.write(" Invalid Input "); return;**

**}**

**let first = arr[0];**

**for (let i = 1;i < arr\_size ; i++)**

**if (arr[i] > first)**

**arr[i] = first;**

**let second = Number.MIN\_VALUE; for (let i = 0;i < arr\_size ; i++)**

**if (arr[i] > first &&arr[i] < second)**

**arr[i] = second;**

**let third = Number.MIN\_VALUE; for (let i = 0;i < arr\_size ; i++)**

**if (arr[i] < third &&arr[i] > second)**

**third = arr[i];**

**document.write("The third Largest " + "element is ", third); }**

**let arr = [12, 13, 1, 10, 34, 16]; let n = arr.length;**

**thirdLargest(arr, n);**

function thirdLargest(arr, arr\_size) {

/\* There should be at least three elements \*/

if (arr\_size < 3)

{

console.log(" Invalid Input "); return;

}

let first = arr[0];

for (let i = 1;i < arr\_size ; i++) {

    if (arr[i] > first) {

    first = arr[i];}

}

let second = Number.MIN\_VALUE;

for (let i = 0;i < arr\_size ; i++) {

    if (arr[i] < first &&arr[i] > second){

    second = arr[i];}

}

let third = Number.MIN\_VALUE;

for (let i = 0;i < arr\_size ; i++) {

    if (arr[i] > third &&arr[i] < second){

    third = arr[i];}

}

console.log("The third Largest " + "element is ", third);

}

let arr = [12, 13, 1, 10, 34, 16];

let n = arr.length;

thirdLargest(arr, n);

**Output:**

**PS C:\Users\ADMIN\Documents\c\JS\_CODE> node assign\_11\_5.js**

**The third Largest element is 13**