Mohan Sai Potla

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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]

```
//To take input from browser
let userInput = prompt('Enter comma separated numbers');
let arr= userInput.split(',');
arr = arr.map(i => parseInt(i));

//let arr = [1,2,3,4,5];

let oddEle = arr.filter(num => num%2 !=0);
console.log(oddEle);
let evenEle = arr.filter(num => num%2 ==0);
console.log(evenEle);

//Print the difference between the two sums
let sumInOdd = oddEle.reduce((sum,ele) => sum+ele);
console.log(sumInOdd)
```

```
let sumInEven = evenEle.reduce((sum,ele) => sum+ele);
console.log(sumInEven);
let difference = Math.abs(sumInEven-sumInOdd);
console.log(`Difference = ${difference}`);

//Print the number of elements in odd places
console.log(`Odd Elements = ${oddEle.length}`);

//Print the number of elements in even places
console.log(`Even Elements = ${evenEle.length}`);

//Print the average of all elements in the array
let avg = (sumInOdd+sumInEven)/arr.length;
console.log(`Average = ${avg}`);

//Print GCD of Sum of Numbers at Odd Places and Sum of Numbers at Even Places
let GCD = gcd(sumInEven,sumInOdd);
function gcd(a,b) {
    if(b==0) return a;
    else return gcd(b,a%b);
}
console.log(`GCD = ${GCD}`);
```

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.

```
let arr1 = prompt("Enter array 1");
let arr2 = prompt("Enter array 2");
```

```
arr1= arr1.split(',');
arr1 = arr1.map(i => parseInt(i));

arr2= arr2.split(',');
arr2 = arr2.map(i => parseInt(i));

// let arr1= [1,2,3,4,5];
// let arr2= [6,1,8];

let ans = [0,0];
for(let i =0; i<arr1.length; i++){
    if (arr1[i]==4){
        ans[0]= 1;
    }
}
for(let i =0; i<arr2.length; i++){
    if (arr2[i]==4){
        ans[1]= 1;
    }
}
console.log(ans);

if (ans[0] !=0 && ans[1] !=0){
    console.log("4 is present in Both arrays");
}else if(ans[0] !=0 && ans[1]==0){
    console.log("4 is in array 1");
}else{
    console.log("4 is in array 2")
}
```

3. Write a JavaScript program to flatten the array, ie, turns a deep array into a plain
array.
Note: Do not use array.flat();

```
//Program to flatten the array
const flattenArray = function(arr, result = []) {
    for (let i = 0; i < arr.length; i++) {
      const value = arr[i];
      if (Array.isArray(value)) {
        flattenArray(value, result);
      } else {
        result.push(value);
      }
    }
    return result;
  };

//driver code
let arr= [ 1, 2, [ 3, 4, [ 5 ] ] ];
let result = flattenArray(arr);
console.log(result);
```

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

```
//To take input from browser
let arr = prompt("Enter the array elements");
arr = arr.split(',');
arr = arr.map(i => parseInt(i));

// let arr = [1,2,3,2,3,4,5];

// Program to Store all duplicate elements in a separate array
let duplicates = arr.filter( (num,index) =>{
    if(arr.indexOf(num) != index) return num;
})
console.log(duplicates);

//Program to Remove the duplicate elements from the original array
arr = [...new Set(arr)];
console.log(arr);
```

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

```
//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)
        first = arr[i];

let second = Number.MIN_VALUE;

for (let i = 0; i < arr_size ; i++)
    if (arr[i]>second && arr[i]<first)
        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];

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

//driver code
let arr = [12, 13, 1, 10, 34, 16];;
let n = arr.length;
thirdLargest(arr, n);
```