**JavaScript Assignment 13**

**1. Write a JavaScript program to get an array from the user and return the:**

**a) Sum of all elements in the array using reduce()**

**b) Average of all elements in the array using reduce()**

**Sample Input:**

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

**Output:**

**15**

**3**

let sum = 0;

let arr =[];

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

for(let i =0; i<5 ; i++) {

    let ele = parseInt(prompt('Enter the elements of array : '));

    arr.push(ele);

}

console.log(arr);

/\* a) Sum of all elements in the array using reduce() \*/

const sum1 = arr.reduce((sum, num) => sum+num);

console.log(sum1);

/\* b) Average of all elements in the array using reduce() \*/

const avg1 = sum1/5;

console.log(avg1);

**OUTPUT:**

PS C:\Users\ADMIN\Documents\c\JS\_CODE> node assign\_13\_1.js

Enter the elements of array : 5

Enter the elements of array : 3

Enter the elements of array : 5

Enter the elements of array : 2

Enter the elements of array : 6

[ 5, 3, 5, 2, 6 ]

4.2

**2. Write a JavaScript program to**

**a) Calculate grades on basis of marks**

**>90 = A**

**>80 = B**

**>70 = C**

**>60 = D**

**>50 = E**

**else = F**

**b) Map the grades of each student**

**c) Group students according to the grades they have received and display.**

**Sample Input:**

**let students = [**

**{ name: "John", marks: “92” },**

**{ name: "Oliver", marks: “85” },**

**{ name: "Michael", marks: “79” },**

**{ name: "Dwight", marks: “95”},**

**{ name: "Oscar", marks: “64” },**

**{ name: "Kevin", marks: “48” },**

**];**

**Output:**

**{**

**'A': [ { name: "John", grade: “A” },**

**{ name: "Dwight", grade: “A” } ],**

**'B': [ { name: "Oliver", grade: “B” } ],**

**'C': [ { name: "Michael", grade: “C” } ],**

**'D': [ { name: "Oscar", grade: “D” } ],**

**'E': [ ],**

**'F': [ { name: "Kevin", grade: “F” } ],**

**}**

let students = [

    { name: "John", marks: "92" },

    { name: "Oliver", marks: "85" },

    { name: "Michael", marks: "79" },

    { name: "Dwight", marks: "95"},

    { name: "Oscar", marks: "64"},

    { name: "Kevin", marks: "48" },

    ];

function grade1(marks){

    if(marks > 90) {return 'A';}

    else if(marks > 80 && marks < 90) {return 'B';}

    else if(marks > 70 && marks < 80) {return 'C';}

    else if(marks > 60 && marks < 70) {return 'D';}

    else if(marks > 50 && marks < 60) {return 'E';}

    else {return 'F';}

}

const stu = students.map(item =>{

    const Gr = {};

    Gr[item.name] = item.name;

    Gr.grade = grade1(item.marks);

    return Gr;

});

const groupByCategory = stu.reduce((group, product) => {

    const { grade } = product;

    group[grade] = group[grade] ?? [];

    group[grade].push(product);

    return group;

  },{});

  console.log(groupByCategory);

**OUTPUT:**

{

A: [ { John: 'John', grade: 'A' }, { Dwight: 'Dwight', grade: 'A' } ],

B: [ { Oliver: 'Oliver', grade: 'B' } ],

C: [ { Michael: 'Michael', grade: 'C' } ],

D: [ { Oscar: 'Oscar', grade: 'D' } ],

F: [ { Kevin: 'Kevin', grade: 'F' } ]

}