➢Question 1:

➢Create an object student using object literal which has

➢Properties: firstName:String, lastName:String, grades: Array

➢Methods:

➢inputNewGrade(newGrade): push newGrade to grades ➢computeAverageGrade(): return average of grades

➢Create an Array with multiple students which are created using Object.create(); ➢Then compute the average grade for all students in the array

let student = {

firstName: "",

lastName: "",

grades: [],

inputNewGrade: function (newGrade) {

this.grades.push(newGrade);

},

computeAverageGrade: function () {

return this.grades.reduce((sum, num) => sum += num, 0) / this.grades.length;

}

};

let students = [];

let s1 = Object.create(student);

s1.firstName = "Awaab";

s1.lastName = "Elamin";

s1.grades = [];

s1.inputNewGrade(100);

s1.inputNewGrade(100);

s1.inputNewGrade(100);

s1.inputNewGrade(100);

students.push(s1);

let s2 = Object.create(student);

s2.firstName = "Mohamed";

s2.lastName = "Ali";

s2.grades = [];

s2.inputNewGrade(90);

s2.inputNewGrade(90);

s2.inputNewGrade(90);

s2.inputNewGrade(90);

students.push(s2);

let s3 = Object.create(student);

s3.firstName = "John";

s3.lastName = "Kenedy";

s3.grades = [];

s3.inputNewGrade(95);

s3.inputNewGrade(96);

s3.inputNewGrade(97);

s3.inputNewGrade(98);

students.push(s3);

let sum = 0;

for (let student of students) {

console.log(student.computeAverageGrade());

sum += student.computeAverageGrade();

}

let avgGrades = sum / students.length;

console.log(avgGrades);

➢Question 2: Redo the Question 1 using Constructor Function

function Student(firstName, lastName) {

this.firstName = firstName;

this.lastName = lastName;

this.grades = [];

}

Student.prototype.inputNewGrade = function (newGrade) {

this.grades.push(newGrade);

}

Student.prototype.computeAverageGrade = function () {

return this.grades.reduce((sum, num) => sum += num, 0) / this.grades.length;

}

let students = [

new Student("Awaab", "Elamin"),

new Student("Tom", "Hanks"),

new Student("Silivster", "Stalon"),

new Student("Bell", "Getz"),

new Student("Jamal", "Saeed"),

new Student("Ali", "Osman")

];

for(let student of students){

student.inputNewGrade(100);

}

for(let student of students){

student.inputNewGrade(90);

}

for(let student of students){

student.inputNewGrade(80);

}

for(let student of students){

student.inputNewGrade(100);

}

let sum = 0;

for(let student of students){

sum += student.computeAverageGrade();

}

let avgGrades = sum / students.length;

console.log(avgGrades);

➢Question 3: ➢Add a new method named sort() without parameters in built-in constructor function Array. It’ll sort all elements in the array in ascending order

Array.prototype.sort = function () {

for (let i = 0; i < this.length -1; i++) {

for (let j = i + 1; j < this.length; j++) {

if(this[i] > this[j]){

let temp = this[i];

this[i] = this[j];

this[j] = temp;

}

}

}

return this;

}

let testingArray = [2,1,4,3].sort();

console.log(testingArray);