Course : Web Programming Principles -WEB222	Assignment 1 of 3	Contribution:10% of course
Prof: Kadeem Best	Date Given: October 2nd 2020	Date Due:15th October 2020

Notes for the Student: This Assignment is designed to give you experience with developing and demonstrating programming concepts using JavaScript.

Background: You will need to have access to a code editor and have a thorough understanding of JavaScript and Programming Fundamentals such as : variables, operators, expressions, conditionals, loops, arrays, functions, objects)

Assignment Submission Requirements

- Upload all JavaScript files used.
- **This Assignment will not be accepted via email**

Late Penalties

- *Up to 1 day late (The highest mark you can achieve is 75%)*
- *Up to 2 days late (The highest mark you can achieve is 60%)*
- *Up to 3 days late (The highest mark you achieve is 50%)*
- *> 3 days late = 0 MARKS*

ACADEMIC INTEGRITY

Sharing your code and project to other students is **not permitted**. Any learner suspected of breaking the above rules will not have their submission marked; and, a report will be filed with the College's Academic Integrity department.

To prevent issues of academic integrity, it is imperative that you are vigilant that your code is not duplicated, in part or whole, by another learner. Duplication can mean: identical code; or code that is semantically identical in naming and overall construction. Should the instructors discover academic dishonesty as defined above and per the College Academic Integrity Policies, **a grade of 0** will be assigned to all parties involved.

Please review Seneca's policies on Academic Integrity, specifically:"Each student should be aware of the College's policy regarding Cheating and Plagiarism. Seneca's Academic Policy will be strictly enforced.To support academic honesty at Seneca College, all work submitted by students may be reviewed for authenticity and originality, utilizing software tools and third party services. Please visit the Academic Honesty site on http://library.senecacollege.ca for further information regarding cheating and plagiarism policies and procedures.

Detailed Specification

This assessment must be completed individually.

You have been hired as a programmer by the college to write a script using JavaScript that will generate a student's transcript for anUndergraduate student.

A student's transcript will display:

- All the course the student did; and,
- The grade they earned for the courses.

The transcript **must also** display the student's GPA.

Feature 1 **5 MARKS**

You are required to create a fake "database", i.e, an **object array,** that stores at least 5 courses, similarly to the below :

Course Code	Course Title	Course Credit
WEB222	Web Programming Principles	3
WEB322	Web Programming Tools & Frameworks	3
IPC244	Introduction to Programming Using C	3
JAV745	Java Programming	3
OOP244	Introduction to Object Oriented Programming	3

Note, each object in the array must store : a course code, title and course credit.

Feature 2 **10 MARKS**

User Interface:

The user will interact with the script through the **console**.

When launched, the program **MUST** ask the user to enter **ALL** of the following:

- Student ID number
- Student First Name
- Student Last Name
- The number of courses did in the above semester (eg. 3)

FOR EACH COURSE, the program **MUST** prompt the student for the below course information:-

- Course Code (example: JAVA745)
- Mark received in the course (example: 90)

Validation :

When the user enters a course code, your script must search the “fake database” (array of courses objects) to see if the course code entered in the console exists in the “fakeDB”. This is done by traversing through the array to see if the course code entered matches a course code that exists in the “fake database” (array of course objects). If an invalid code is entered, the script must continue to prompt the user until they enter a valid one.

When the user enters a valid course code, your script must pull all the other information for that course, from the “fake database”, as it would be needed later on in the script. For example, if the user enters WEB322 as the course code, your script must be able to access and maintain all other information associated with the course.

Feature 3 **15 MARKS**

GPA Calculation Formula

Here is the formula for calculating an undergraduate student’s semester GPA.

$$\text{Semester GPA} = \frac{\text{total course points}}{\text{total credits earned}}$$

Total course points is the sum of all course points across all of the student’s courses.

Total course points =
course points for course 1 +
course points for course 2 +
course points for course 3 +
... + etc

Course points are calculated on a per course basis:

Course points = *grade value points earned in course* x course credits

Student Grading Scheme and Grade Value Table

Grade	Grade Description	Marks(%)	Grade Value Points
A	Excellent	90-100	4
B	Good	80-89.9	3.0
C	Average	70-79..99	2
D	Minimum Passing Grade	60-69.9	1
F	Failure	0.0-59.9	0

After the student completes entering all relevant data, the program should then print their transcript, listing the following information.

1. Student's name,
2. Student's ID No.
3. The following Course Information **FOR EACH COURSE**:
    a. Course Code
    b. Course Title
    c. Mark Received
    d. Grade
4. Student's GPA

Feature 4 **5 MARKS**

Your Script must be developed with modularity in mind thus, I want to see you create appropriate functions throughout your script

Sample Output

EXAMPLE 1

Enter Student First Name: Shantelle
Enter Student Last Name :Roberts
Enter Student ID : 000136

Enter the number of courses you did in the above semester: 2

Enter Course Code: ITEC133
Enter Course Title: Programming 1
Enter Number of Course Credits: 3
Enter Mark received in course: 92.65

Enter Course Code:ITEC235
Enter Course Title: Object Oriented Programming 1
Enter Number of Course Credit:3
Enter Mark received in course: 82

Thanks, displaying student transcript:

STUDENT TRANSCRIPT

Name : Shantelle Roberts
ID: 000136
Semester Code: 201510
Semester No: 1

Course Code:ITEC133
Course Title: Programming1
Mark: 92.65
Grade:A
Course Code:ITEC235
Course Title: Object Programming1
Mark: 82
Grade:B

Student GPA:3.5

THE END