MODULE: COMP07105-46392 - Rich Application Development 301

PROGRAMME(S):
SG_KGADV_B07   Bachelor of Science in Computing in Games Development
SG_KSODV_B07   Bachelor of Science in Computing in Software Development
SG_KCMPU_H08   Bachelor of Science (Honours) in Computing
SG_KCMPU_B07   Bachelor of Science in Computing
SG_KSODV_H08   Bachelor of Science (Honours) in Computing in Software
                 Development

YEAR OF STUDY: 3

EXAMINER(S):

          Mr. Paul Powell   (Internal)
          Carmel O'Hare   (External)

TIME ALLOWED: 2 Hours

INSTRUCTIONS: **Answer all questions.**

This is an Open book exam. You may use any resources at your disposal, but you may not converse with any other person. Accept the starting project from the GitHub classroom link provided at *https://classroom.github.com/a/90udCEMt* **After each part of question 1 is complete commit and push the changes resulting in that part as your ID followed by the Part name (E.G S99999999 Part 1a) before continuing onto the next part of the question. NOTE Marks allocated for code that is working and clearly explained using comments. Marks are allocated for using the Activity tracker package provided. You must Submit a supporting Video to the Moodle Assignment provided explaining your work submitted within 12 hours of finishing your exam.**

PLEASE DO NOT TURN OVER THIS PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.
The exam takes place in a Lab that has Visual studio 2022 properly installed and supported on the day of the exam by a computer technician. Students use their own laptops,

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QUESTION 1   *[TOTAL MARKS: 100]*

Q 1(a)   **[10 Marks]**
Using the blank solution provided here [Link to GitHub Classroom assignment]
1. Create a class Library project called **DataModel.Sxxxxxxx** where **Sxxxxxxx** is your student ID.
2. Create an MVC project **without authentication** called **FinalExam.MVC.Sxxxxxxx** where **Sxxxxxxx** is you student ID.
3. Create a Console based project called **Console.Sxxxxxxx** where **Sxxxxxxx** is you student ID.
4. Add a project dependency to the class library project from the MVC and console app.
5. In the package manager window run the following command to install the Activity tracker in all 3 projects

      Install-Package Tracker -Version 1.0.7-beta

6. Add the following call to the Console Program.cs file and run the console app.

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[Your Name]***, activityName: "Rad301 January 2024", Task: "Exam Start");**

Q 1(b)   **[30 Marks]**
In the DataModel class library and using Entity Framework Migrations
1. Add the necessary Entity Framework NuGet Packages
2. Add POCO classes and a DB context class called **DbContextSxxxxxxx** where **Sxxxxxxxx** is you student ID.
3. The Db Context should create a database called **FE-23-Sxxxxxxxx-DB** where **Sxxxxxxxx** is your student ID.
4. Using Migrations or otherwise create the database with the Data shown in Table 1.

Student

StudentID	First Name	Second Name	Date of Birth
S00000001	Paul	Brightner	23/06/1990
S00000002	Millie	Maghar	12/01/1989

Grades

ID	StudentID	Subject Title	Grade	Date Entered
1	S00000001	Rich Application Development 1	70	15/12/2024T14:00
2	S00000001	Rich Application Development 2	65	15/03/2024T09:00
3	S00000002	Rich Application Development 1	55	15/12/2024T14:02
4	S00000002	Rich Application Development 2	70	15/03/2024T09:15
5	S00000001	Database Systems 2	40	10/12/2024T14:35

Table 1 Data to be Seeded to the Database

Q 1(c) [30 Marks]

In the console App you have created

1. Change the Track Task to **Q1 Part c**
2. Create an instance of the Db Context
3. List the Students
4. List the Grades that are less than 60.
5. List Student First name, Second name, Subject Title, and grade where the grade if greater than 60.
6. Add a new Student with the following details and grades.

StudentID	First Name	Second Name	Date of Birth
S00000003	Robert	Plant	03/05/2003

ID	StudentID	Subject Title	Grade	Date Entered
6	S00000001	Rich Application Development 1	55	10/12/2024T14:36
7	S00000001	Database Systems 2	70	10/12/2024T14:45

Q 1(d) [30 Marks]

In the MVC App

1. Add the following call to the Program.cs file.

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[Your Name]***, activityName: "Rad301 January 2024", Task: "Q1 Part d");**

2. Configure the app to use the Class Library Db Context.
3. Create a Controller and Views for the Students.
4. In the Detail view created by the wizard for the student, add a partial view or similar (simple table bound to the student grades will attract less marks) to show the grades of the student.

[End of Question 1]

[END OF EXAM]