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Atlantic Technological University

ATLANTIC TECHNOLOGICAL UNIVERSITY

AUGUST EXAMINATIONS 2023/2023

MODULE: COMP07105-30546 - Rich Application Development 301

PROGRAMME(S):

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

YEAR OF STUDY: 3

EXAMINER(S):

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

TIME ALLOWED: 2 Hours

INSTRUCTIONS: **Answer all questions.**

Students are to be admitted into the Computer Lab a ½ hour before the paper is handed out. A starting code link is provided on Moodle prior to the exam start. This is an Open book exam. Students may use any resource but may not converse with any other student or any person online. Students may not use GPT Chat. NOTE Marks will be awarded for code that is clearly explained using comments. The correct use of GitHub also achieves better marks. The inclusion and activation of Activity tracker messages is used to ensure that the work is your own.

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 with .net framework 4.8 or the students have access to a VM with Visual studio 2022 properly installed, that is supported on the day of the exam by a computer technician. Students can use their own laptops. Students should upload a copy of the exam to the Assignment link provided on Moodle as a backup only. Following the Exam, students have 12 hours to upload a video explanation of their completed Exam to the Assignment link provided in Moodle. The internal examiner needs to be informed of the date that the exam will take place.

QUESTION 1 ***[TOTAL MARKS: 100]***

The Solution provided has all the projects required, the NuGet packages installed, excel sheets with sample data, and the project dependencies setup to complete the exam. Before you begin the exam Change the Activity tracking message in the Startup.cs file to use your Student ID and Name.

ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[Your Name]***, activityName: "Rad301 Autumn 2023", Task: "Exam Start");**

1. Build the solution. This should restore any packages.
2. Run the MVC App to show the Default Page.
3. *Commit and Push changes to GitHub as* ***[Your ID] Exam started***

Q 1(a) **[30 Marks]**

Examine the Data in the tables provided in **Appendix A**.

1. Add the configuration string provided in **Appendix B** to the Web Config file of the MVC project and the App.config of the class library project.
2. In the class library project create a set of Entity Framework code first classes and a Database Context class called **TeamContext** that will support the data presented in **Appendix A**
3. Enable Migrations in the class library project and in the resulting configuration class file put the following track message in the seed method.

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[Your Name]***, activityName: "Rad301 Autumn 2023", Task: "Seeding Data Model");**

4. Create a migration called **initial-migration-SXXXXXXXX** where SXXXXXXXX is your college ID.
5. Update the database to create the database structure.
6. Using the csv files provided or otherwise seed the data presented in **Appendix A** into the appropriate tables as indicated by your model
7. ***Commit and Push changes to GitHub*** ***as your ID followed by the Part name (E.G S99999999 Part b)***

Q 1(b) **[25 Marks]**

In the Console project.

1. Add the following Activity tracking statement to the Main method.

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[Your Name]***, activityName: "Rad301 Autumn 2023 ", Task: "Running Console Queries");**

2. Write a method called **Team_enquiries(string team)** that will create an instance of the Team Context and print out a list of all the Player Details, for a named team. Test your method against the call **Team_enquiries("Under 21s");**

3. Run the console app to test your results against the data provided **Appendix A**.
4. ***Commit and Push changes to GitHub*** ***as your ID followed by the Part name (E.G S99999999 Part c)***

Q 1(c) **[20 Marks]**

In the MVC Project with Individual Account Authorisation enabled.

1. Enable Migrations
2. Add the following Track Message in the Seed Method in the Configuration File in the MVC App with your Student Id and Name filled in

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[your ID]***, activityName: " Rad301 Autumn 2023", Task: "Seeding Application Users and roles");**

3. Add a Migration called **MVC-*Initial-Migration***-SXXXXXXX (where SXXXXXXX is your student ID) and Update the Database to create the Authorisation Tables.
4. Seed Users and roles as per the data presented in **Appendix C**.
5. Update the Track Message at the Configuration Method in the Startup.cs file of the MVC App to the Following

   ActivityAPIClient.Track(StudentID: *[your ID]***, StudentName:** *[your ID]***, activityName: "Rad301 Autumn 2023", Task: "Testing Login MVC App");**

6. Run the MVC App and login as the user **admin@bufc.ie**
7. ***Commit and Push changes to GitHub*** ***as your ID followed by the Part name (E.G S99999999 Part 1d)***

Q 1(d) **[25 Marks]**

1. Create a controller called **TeamEnquiries** based on the Team Entity of the Team Data Context that will allow a logged in user in a **Registrar** role to view the Team details for All Teams. In the constructor for the **TeamEnquiries** controller put the following tracker call.

   ActivityAPIClient.Track(StudentID: "", StudentName: "",

   activityName: " Rad301 Autumn 2023", Task: "Creating Team Controller");

2. Create a menu option for the **TeamEnquiries** Controller should only appear if the currently logged in user is in the Registrar role.
3. In the **TeamEnquiries** controller Create a **ViewTeam** action and associated view that will filter Players using a dropdown box containing Team names together with a partial view of Players for the chosen Team.

Commit and Push changes to GitHub ***as your ID followed by the Part name (E.G S99999999 Part 1e)***

[End of Question 1]

APPENDICES

Appendix A – The Business Data Model

Teams

TeamID	Name
1	Under 15s
2	Under 13s
3	Under 20s
4	Under 21s

Players

PlayerID	Name	DOB	DateRegistered	TeamID	Position	Registered
1	Elizabeth Andersen	01/04/2007	01/05/2023	1	Goal Keeper	TRUE
2	Catherine Autier Miconi	01/05/2007	01/03/2023	1	Right Fullback	TRUE
3	Thomas Axen	03/04/2010		2	Goal Keeper	FALSE
4	Jean Philippe Bagel	01/03/2001		3	Right Fullback	FALSE
5	Anna Bedecs	01/06/2003		4	Goal Keeper	FALSE
6	John Edwards	01/05/2003		4	Center Midfield	FALSE
7	Alexander Eggerer	01/12/2002		4	Center Half	FALSE
8	Michael Entin	01/06/2003		4	Left Fullback	FALSE
9	Daniel Goldschmidt	01/12/2001		3	Center Half	FALSE
10	Antonio Gratacos Solsona	01/03/2001		3	Center Half	FALSE
11	Carlos Grilo	01/11/2003		4	Right Midfield	FALSE
12	Jonas Hasselberg	01/06/2003		4	Left Midfield	FALSE

NOTE: You may use the CSV helper library provided to populate the tables with the data provided in the CSV files in the Data Layer Class Library Project. You can also cut and paste the data from excel into tables created but this will attract less marks than seeding using code. The headers in the CSV file are provided. They can be removed if your seeding does not require them. The CSV files can also be opened as tables in Excel to access the data directly.

Appendix B – Connection String for the Web Config

```
<connectionStrings>
   <add name="Rad301Autumn2023Connection"
        connectionString="Data Source=(LocalDb)\MSSQLLocalDB;
        Initial Catalog=RAD301Autumn2023DB-PPOWELL;
        Integrated Security=True"
        providerName="System.Data.SqlClient" />
  </connectionStrings>
```

NOTE: Replace **ppowell** with your College ID in the Initial Catalog entry

Appendix C – Additional Application User details

Table 1 Application User details with Roles indicated

Firstname	Secondname	Email Address	UserName	Password	Role
Paul	Dalton	admin@bufc.ie	admin@bufc.ie	Padmin$1	Registrar
Bill	Martin	bloggsm@bufc.ie	bloggsm@bufc.ie	Employee$1	Team Manager
Mary	Bligh	blighm@bufc.ie	blighm@bufc.ie	Employee$2	Team Manager
Martha	Rotter	rotterm@bufc.ie	rotterm@bufc.ie	Employee$3	Team Manager

[END OF EXAM]