10. [2025-08-04] S2P01 – Practical 09

Practical Theme: Processing data with database coding and C# within MVC.

- **Due date:** 2025-08-11 before 23:59.

Activity Notes & Instructions

PURPOSE AND OBJECTIVE.

The purpose and objective of this practical activity is to:

- Objective 1: To get more experience with MVC architecture and object orientation programming.
- Objective 2: To revise the creation and population of databases in SQL Server Management.
- Objective 3: To connect to a database in MVC, open and close the connection
- Objective 4: To insert, update and delete records in a database from an MVC application.

MATERIAL BEING REFERENCED.

To successfully complete this activity, a student should refer to the notes, details and sample projects that is part of:

- 04. S1L04 Session 04 – HTML and CSS within MVC.
- 05. S1L05 Session 05 – Responsive web design using Bootstrap.
- 10. S2L02 Session 10 – Processing data with database coding and C# within MVC.
- 10. S2L02 Session 10 – https://youtu.be/QBfh1br5rLA

ADDITIONAL USEFUL RESOURCES.

Additional reading resources that may assist with the completion of this activity:

- Learn ASP.NET MVC 5 - TutorialsTeacher.com [URL: https://www.tutorialsteacher.com/mvc].
- SqlClient - https://learn.microsoft.com/en-us/dotnet/api/system.data.sqlclient?view=dotnet-plat-ext-7.0
- SqlClient - https://www.dotnetperls.com/sqlclient
- https://docs.microsoft.com/en-us/dotnet/framework/data/adonet/ado-net-code-examples#sqlclient
- https://www.codeproject.com/Articles/823854/How-to-connect-SQL-Database-to-your-Csharp-program

RESEARCH THAT WILL BE NECESSARY.

You will have to conduct independent research and readings on the following topics:

- Topic 1: Creating a database using SQL Server (Knowledge from INF 214)

GENERAL INSTRUCTIONS.

Please ensure that you follow the following general instructions.

- This is an individual practical.
- Practical work is based on assessment objectives. If an objective has been achieved a mark will be allocated.
- All practical activities conceptually (based on skills) feed into one or more homework assignments.
- By completing the practical work, you will be learning the necessary skills to complete homework assignments.

SUBMISSION DUE: 2025-08-11 before 23:59

- There shall be no extensions to the deadline.
- All practical work will be marked in the following practical session during the follow-up week.
- Verify the completeness of your upload.
- Incomplete uploads will be considered unsubmitted work.
- E-mail and / or late submissions WILL NOT be accepted.
- NO EXCEPTIONS WILL BE MADE FOR ANYONE.

ACTIVITY DESCRIPTION AND DETAILS.

This week we started working with databases. In the first class, we considered how a web application can work with an existing data source (data table). Before we proceed from this basic aspect, it is essential to master it well. Hence this prescribed practical activity.

Scenario Description

United Global University (fictional) allows each student to register to be a member of a social club on campus. **Blue Sky, Rotary, Red Hat,** and **Spicy** are the four options. To be registered, a student must provide the following information: Full Name, Club name (one of the four options), Age, and Membership fee. Your task is to create a webform that will enable students to register. The operations to be supported are:

TASKS:

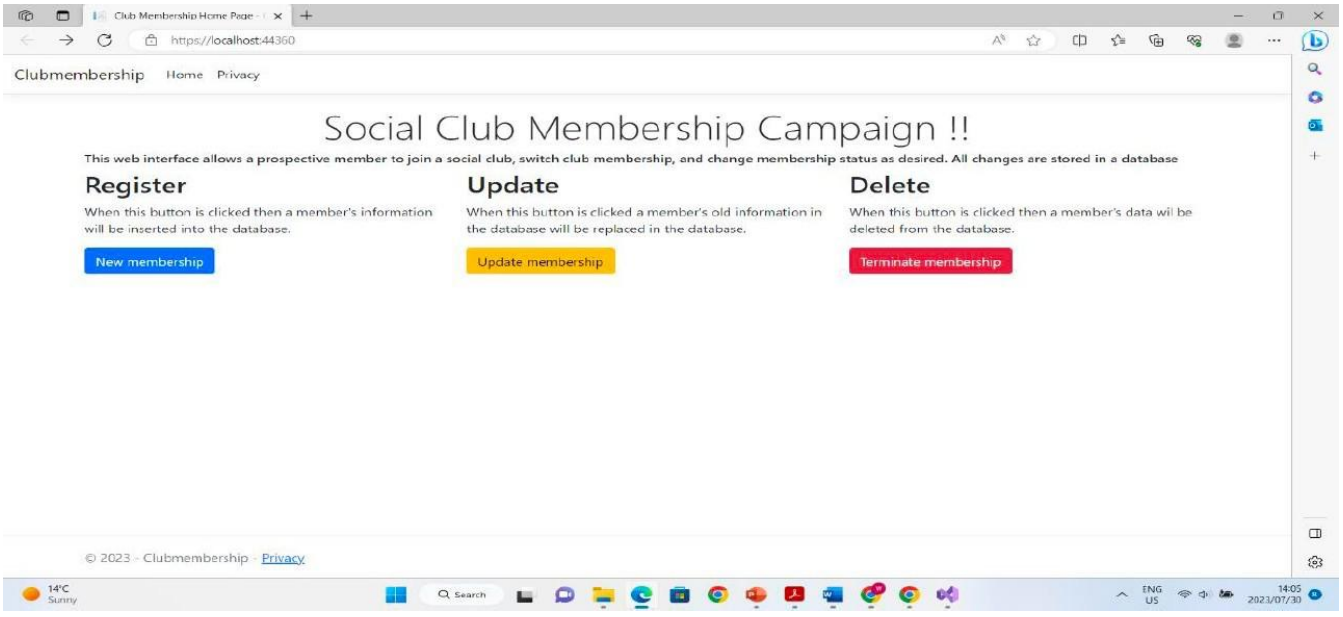
1. Create a data table in SQL Server to store a member's record (consisting of the four data fields. Also, there should be a unique id data field for each record
2. Create an MVC application that has a web interface that enables the following:
3. An opening page that explains the purpose of the web application XXXX
4. Join a social club as a member (Insert/Add a new record)XXXX
5. Change of membership profile after registration (Update)XXXX
6. Exit club membership (Delete)

Things provided for you

This exercise directly applies to the discussion during this week's preparatory class. Further, the video tutorial at: https://youtu.be/QBfh1br5rLA demonstrated the same concept on a small scale. Your task is to apply the taught concept to more data fields. The code sample uploaded to ClickUp could be modified to realise the specified tasks. Also, the code snippets in the lecture note provide a starting point for the key operations of Insert, Update, and Delete. A sample view of your MVC application and expected functionalities are shown below.

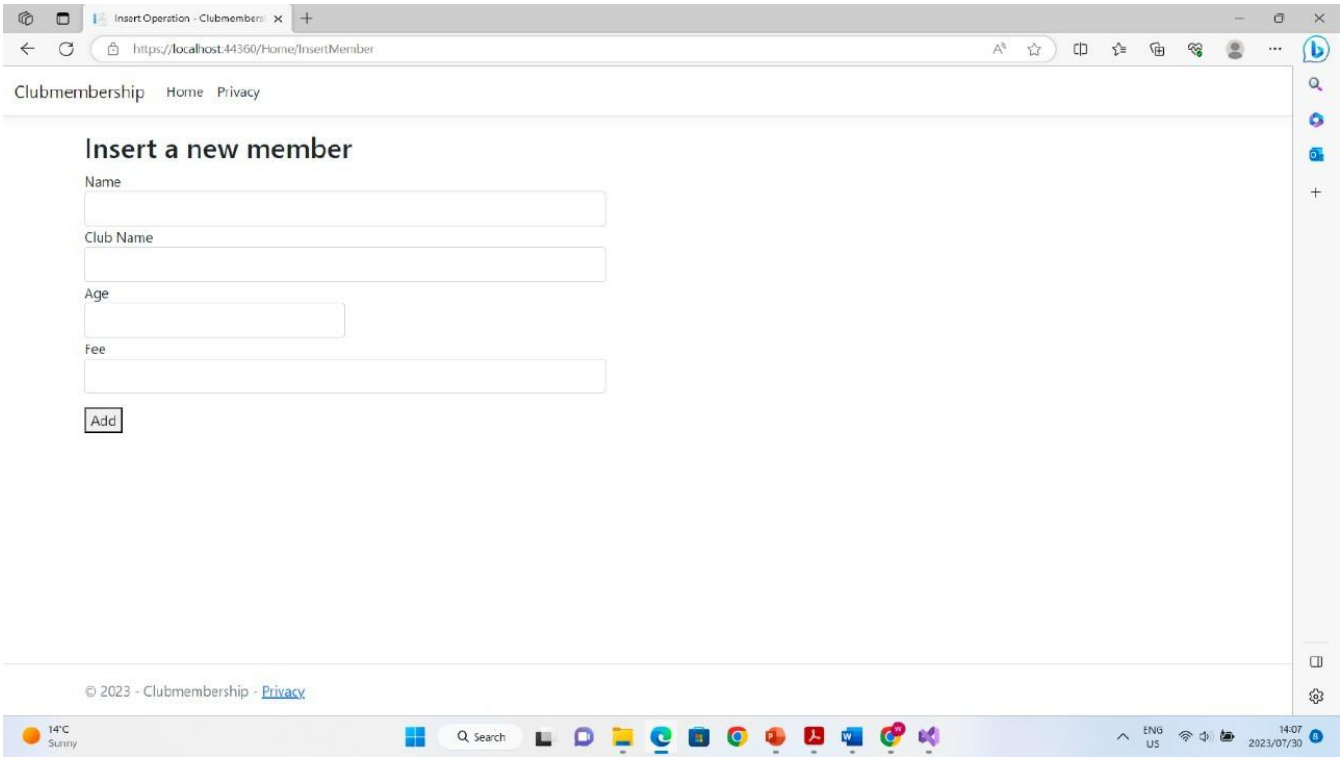
A sample outlook of the main application page

The code file (project) provided for you needs to be modified to reflect what is below. The project uses the Bootstrap class, so minimal changes need to be made to it to achieve this or something better!



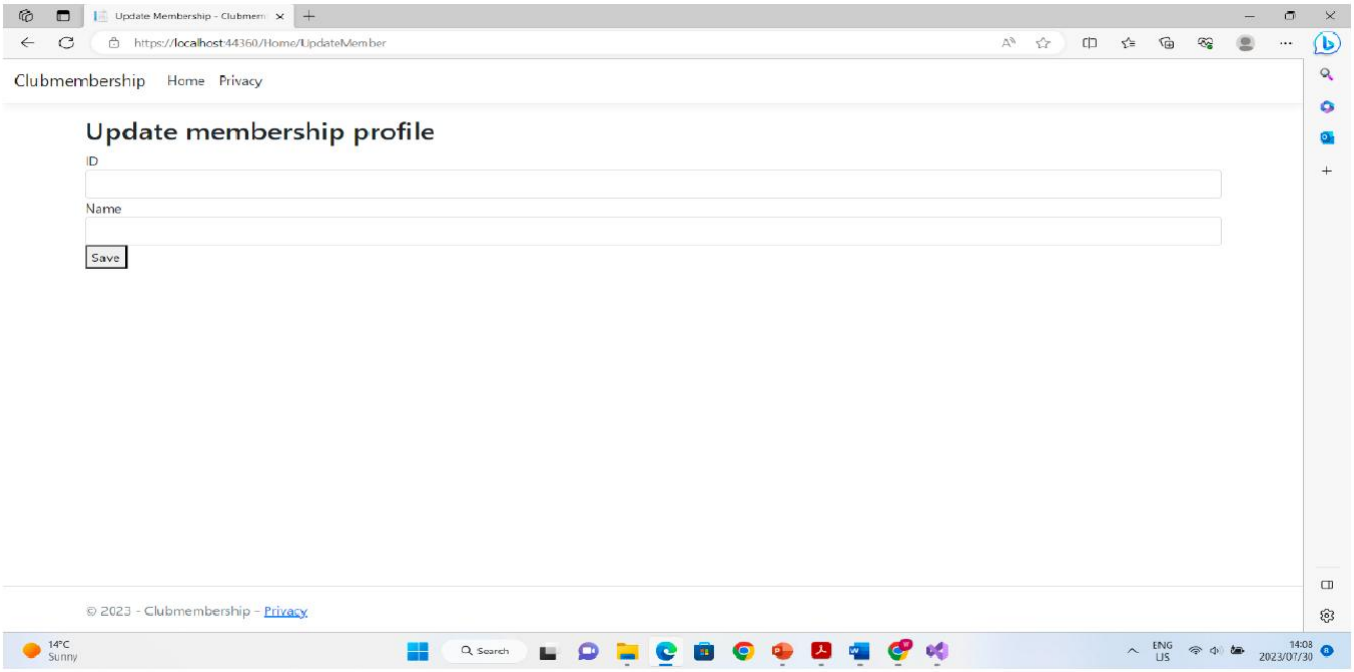
Note: The examples in the lecture note of this week's preparatory class and the code snippets show an implementation of this task for two fields (id, name). Your task is to extend this to cover additional 3 data attributes (data fields) (club name, Age, fee), which makes a total of 5 data fields.

Task : insert a record into the ClubMembership table.

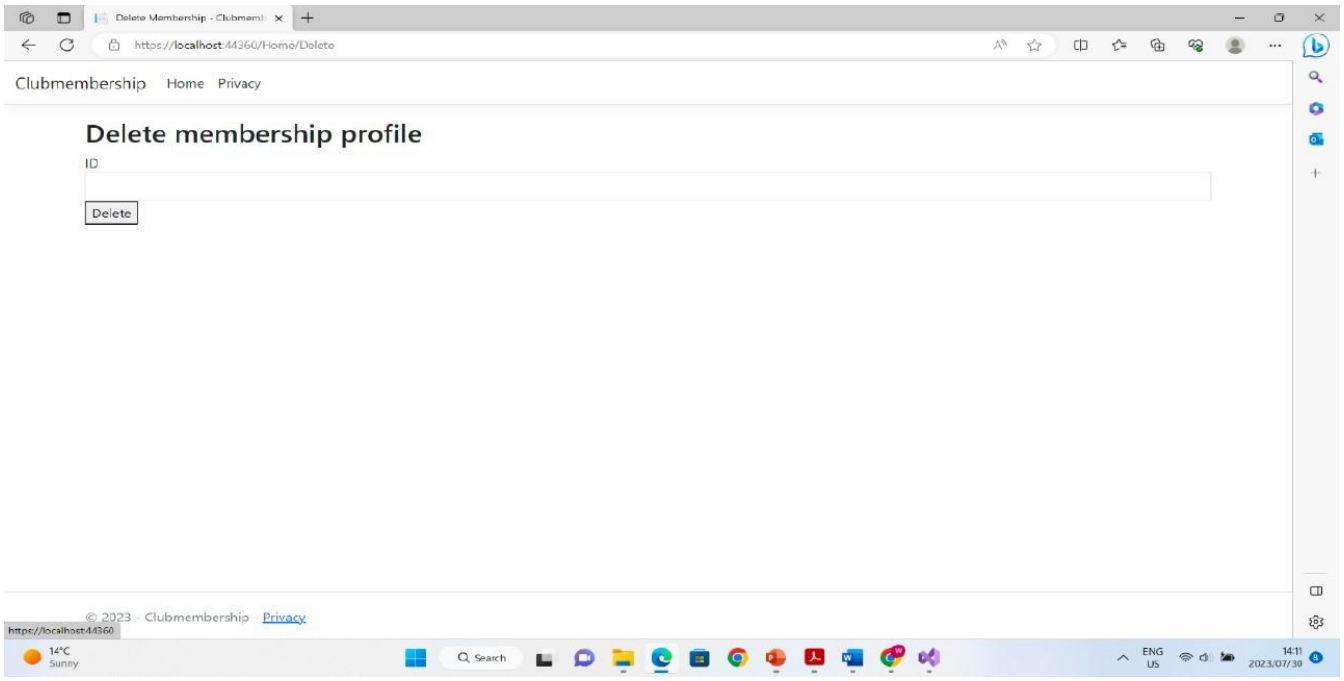


Task : to update/change the value of a record previously stored in the ClubMembership table when the id of a member is provided.

Note all the data fields of a club member: name, club name, Age, and fee must be shown here before changes are made and the update operation is performed.


Update Membership - Clubmem
https://localhost:44360/Home/UpdateMember
Clubmembership
Home
Privacy
Update membership profile
ID
Name
Save
© 2023 - Clubmembership - Privacy
14°C
Sunny
Search
ENG
US
14:08
2023/07/30

Task 3: delete a record previously stored in the ClubMembership table when the id of a member is provided.



Department of Informatics

2024

Student Number									Surname	Initials

REQUIREMENT [Marking] • **Check the appropriate mark [XX]** • **Add final mark and assign to top of rubric**	**DYSFUNCTION**	**PARTIAL**	**MAX**
1. Creation of an informative opening page on Social Club membership	**0**	**2**	**3**
2. Successfully connecting to the database	**0**	**1**	**2**
3. The global visibility of the connection string	**0**	**1**	**2**
4. Add Record	**0**	**2**	**3**
5. Update Record	**0**	**2**	**3**
6. Delete Record	**0**	**2**	**3**
7. Error handling	**0**	**1**	**2**
Home Controller			
8. Index Action Result	**0**	**2**	**4**
9. Insert Action Result	**0**	**2**	**4**
10. Delete Action Result	**0**	**2**	**4**
TOTAL	**0**	**17**	**35**