

**SECTION B****QUESTION 2: SQL AND DATABASE**

The LAN FANatics group has developed a database called **LanFans.mdb**, which contains information about players and the games they have played.

The **LanFans.mdb** database contains two tables called **tblPlayers** and **tblGames**.

The records contained in the **tblPlayers** table consist of the following fields:

- PlayerID – a unique five-character identification code (text data type) which is the primary key (PK)
- Name – name of player (text data type)
- Email – e-mail address of player (text data type)
- DateOfBirth – date of birth of player (date/time data type)

Example data from the **tblPlayers** table:

PlayerID	Name	Email	DateOfBirth
JS009	Joe Smuts	joe@mpw.com	2002-11-16
LK001	Louis Koekemoer	louisk@yahoo.com	1998-06-11
SN002	Sifiso Ntshangase	ntshangase@gmail.com	1995-03-18
UH004	Ulrich Hinze	ulrich@yahoo.com	2001-07-31

The records contained in the **tblGames** table consist of the following fields:

- GameIndx – unique index code for each game (number data type) starting from the value of 1(PK)
- GameDate – date on which game was played (date/time data type)
- PlayerID – code of player who played the game (text data type)
- Duration – number of minutes the game lasted (integer data type)
- Score – score obtained by the player who played the game (integer data type)

Example data from the **tblGames** table:

GameIndx	GameDate	PlayerID	Duration	Score
1	2016/01/11	SM004	455	2200
2	2016/01/12	SM004	241	1952
3	2016/01/12	SV007	381	1280
4	2016/01/12	LK001	372	5237
5	2016/01/12	HN023	389	4142

The **PlayerID** field has been used to link the two tables.

**NOTE:**

- The date format might be displayed differently on your computer due to the regional settings on your computer.
- Connection code has been provided.
- The database is password-protected. Therefore you will not be able to access the database directly.

Do the following:

- Compile and execute the program in the **Question2** folder. The program limited functionality.
- Complete the code for each question as described in QUESTION 2.1 and QUESTION 2.2.

The program provides a GUI with two tab sheets: **Qst2.1 SQL** and **Qst2.2 DB**.

## 2.1 SQL

Select tab sheet **Qst2.1 SQL**, which displays the following GUI:

**LAN FANatics - SQL**

Query Result


2.1.1 Show All Players      2.1.4 Highest Score

2.1.2 Players Born in September      2.1.5 Add Game

2.1.3 Average Game Times      Restore Database

**NOTE:** When the **Restore Database** button is clicked, the data in the database tables will be restored to the original data.

Complete the SQL code to meet the requirements specified in QUESTION 2.1.1 to QUESTION 2.1.5.

**2.1.1 Button [Show All Players]**

All the fields must be displayed for all the players in the **tblPlayers** table. The records must be displayed in ascending order according to the **Name** field.

Example of output of the first four records:

PlayerID	Name	Email	DateOfBirth
AS019	Andrew Singh	singh@easymail.com	1991-09-14
FM013	Franky Mwelase	fmwelase@mpw.com	2003-09-21
GO002	Gerhard Oosthuizen	gerhard@webmail.com	2001-02-26
HN023	Helen Ncube	hncube@gmail.com	1990-09-21

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**2.1.2 Button [Players Born in September]**

Display the **Name** and **DateOfBirth** fields for all players born in September.

Example of output:

Name	DateOfBirth
Helen Ncube	1990-09-21
Piet Venter	2000-09-23
John Smith	1994-09-24
Andrew Singh	1991-09-14
Franky Mwelase	2003-09-21

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**2.1.3 Button [Average Game Times]**

Display the average duration of the games played each day in a new field called **AverageDuration**. The values must be rounded off to ONE decimal place.

Example of output:

GameDate	AverageDuration
2016-01-11	455
2016-01-12	294.8
2016-01-30	299.2
2016-03-10	209.5
2016-04-11	290.3

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**2.1.4 Button [Highest Scores]**

Display the **Name** of the player and the highest score that the player obtained in any game so far in a field called **HighestScore**.

Example of output:

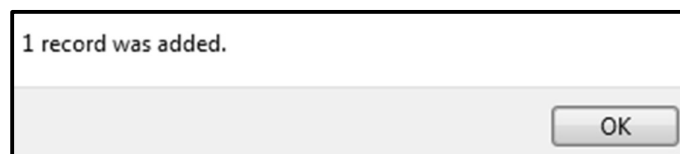
Name	HighestScore
Andrew Singh	5152
Franky Mwelase	5674
Gerhard Oosthuizen	5662
Helen Ncube	5549
Henry Mason	4327

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**2.1.5 Button [Add Game]**

Add a new game with the number 76 as **GameIdx** to the **tblGames** table. The game was played by a player with **PlayerID** 'HM008' on 24 December 2017. The player scored 6 655 points and the game lasted 250 minutes.

Example of output:



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## 2.2 DATABASE MANIPULATION

Select tab sheet **Qst2.2 DB**, which displays the content of both tables as well as the three buttons for the questions that need to be completed:

### Lan FANatics - DB

#### Players Table

PlayerID	Name	Email	DateOfBirth
AS019	Andrew Singh	singh@easymail.com	1991/09/14
FM013	Franky Mwelase	fmwelase@mpw.com	2003/09/21
GO002	Gerhard Oosthuizen	gerhard@webmail.com	2001/02/26
HM008	Henry Mason	mason@yahoo.com	1998/01/25

2.2.1 Domain Users Count

2.2.2 Change Score

2.2.3 Add Game

#### Games Table

GameIndx	GameDate	PlayerID	Duration	Score
1	2016/01/11	SM004	455	2200
2	2016/01/12	SM004	241	1952
3	2016/01/12	SV007	381	1280
4	2016/01/12	LK001	372	5237
5	2016/01/12	HN023	389	4142

Restore Database

#### Display

Display output here

**NOTE:** NO marks will be allocated for the use of SQL statements for QUESTION 2.2. The names of the tables to be used in your code must be **tblPlayers** and **tblGames**.

Complete the code to meet the requirements specified in QUESTION 2.2.1 to QUESTION 2.2.3.

### 2.2.1 Button [Domain Users Count]

- An input box must be used to enter an e-mail domain name, e.g. 'gmail.com'.
- Display the names and e-mail addresses of players who use an e-mail address which contains the domain that was entered.
- Display headings, as shown in the example below.
- Show the total number of addresses at the bottom of the list.

Example of output if the domain name 'gmail.com' has been entered:

PLAYER	E-MAIL ADDRESS
Sifiso Ntshangase	ntshangase@gmail.com
Helen Ncube	hncube@gmail.com
Michelle Grobelaar	grobelaar@gmail.com
Ian Packard	packard@gmail.com
William Campbell	campbell@gmail.com
Jane Flint	jflint@gmail.com
TOTAL for gmail.com: 6	

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**2.2.2 Button [Change Score]**

An additional 250 points can be added to a player's score in some cases, after a dispute has been resolved in favour of the player. Write code to increase the score of the player of the current active record in the **tblGames** table display grid, with 250 points.

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**2.2.3 Button [Add Game]**

Write code to add a new game to the **tblGames** table according to the following requirements:

- The **GameIndx** assigned to the new game must be compiled automatically and follow on the number that was assigned to the previous game.

**NOTE:** Records in a database table are indexed starting at 1 up to the number of records in the table.

- The **GameDate** must be the date the game was added to the table using the 'today's date' function.
- The **PlayerID** must be obtained from the selected record in the **tblPlayers** table.
- Input boxes in the supplied code must be used to allow the user to enter values for the **Duration** field and **Score** field.

Example of a new record that has been added for Sue Prins who played a game for 111 minutes and obtained a score of 2 222:

GameIndx	GameDate	PlayerID	Duration	Score
72	2016-11-18	SP012	313	3684
73	2016-12-12	FM013	279	5674
74	2016-12-12	AS019	117	5128
75	2016-12-12	GO002	201	4793
76	2016-12-12	SP012	111	2222

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- Enter your examination number as a comment in the first line of the program file.
- Save your program.
- Print the code if required.

**TOTAL SECTION B: 40**