

QUESTION 3: DATABASE PROGRAMMING

The database **VideoClub.mdb** contains the details of profile names of people who upload videos for viewing by members of a video club as well as all the videos belonging to each profile. The database contains two tables, namely **Profile** and **Video**.

Table: **Profile**

This table contains the profile name of a person who uploads videos and the date that their profile was created.

Field name	Data type	Description
ProfileID	Autonumber	A unique number assigned to each profile
ProfileName	Text (50)	The name of the profile
DateCreated	Date/Time	The date on which the profile was created

Example of data in the **Profile** table:

	ProfileID ▾	ProfileName ▾	DateCreated ▾
+	1	JanetandJohn	2016-12-15
+	2	TimmyTom	2015-09-30
+	3	MackyDee	2017-11-27
+	4	DonDoe	2015-07-27
+	5	SteveXolo	2015-10-27
+	6	SumiSam	2015-03-23

Table: **Video**

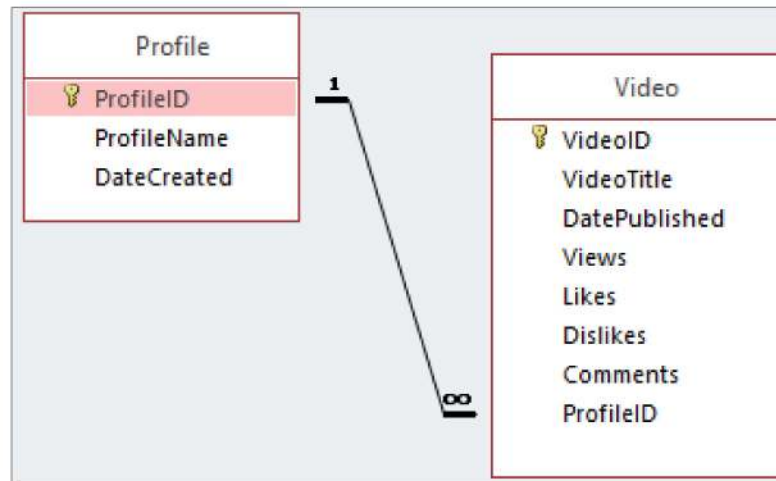
This table contains all the videos that have been uploaded by the profiles.

Field name	Data type	Description
VideoID	Text (50)	A unique code assigned to the video
VideoTitle	Text (80)	The title of the video
DatePublished	Date/Time	The date that the video was published
Views	Number	The number of views for the video
Likes	Number	The number of likes for the video
Dislikes	Number	The number of dislikes for the video
Comments	Number	The number of comments for the video
ProfileID	Number	The number that identifies the profile that the video belongs to

Example of data of the first ten records of the **Video** table.

VideoID	VideoTitle	DatePublished	Views	Likes	Dislikes	Comments	ProfileID
svfFvkHgeWY	#TimsDark Experiment Tim Hortons Dark Roast Coffee	2014-08-15	2706	1479	136	275	2
ag-Mu3jHfWU	#TimsNextDoor – Serving the Neighbourhood	2014-09-26	2356	509	27	70	2
tPFomA-Gm84	\$1 Cravings Menu Haul Taco Bell	2014-08-15	770	144	83	106	1
fla4miaiXIA	Belluminati - \$1 Stacker Commercial Taco Bell	2017-12-15	4023	316	319	254	1
KelYyRvV0go	Brain Freeze - Episode 5 Taco Tales Season 1 Taco Bell	2017-01-05	4095	394	11	98	1
IUKUn7Cy5A	Celebrating 50 Years of SUBWAY Restaurants®	2015-08-26	656	480	160	0	6
oludwaDrmfg	Chrissy Teigen, Alexa Losey, and Andrew W.K	2014-01-14	1153	931	239	205	1
9XzNogAjlFw	Congrats Sid! 2016 NHL Stanley Cup Winner	2016-06-13	635	411	46	61	2
S6xjRrY3CWA	Dan's Coffee Run	2013-02-08	2778	326	4	32	5
HTOpqgQx0xc	Dan's Everylove Story	2012-02-06	280	134	15	118	5

The following one-to-many relationship with referential integrity exists between the two tables in the database:



Do the following:

- Open the incomplete project file called **Question3_p.dpr** in the **Question 3** folder.
- Enter your name as a comment in the first line of the **Question3_u.pas** unit file.
- Compile and execute the program. The program has no functionality currently.

The user interface is displayed on the next page.

- Follow instructions to complete the code for each question, as described in QUESTION 3.1 and QUESTION 3.2.
- **Use SQL code to answer QUESTION 3.1 and Delphi code to answer QUESTION 3.2.**

Question 3.1 Display area (SQL RESULTS)

3.1.1 3.1.2 3.1.3 3.1.4 3.1.5

VIDEOS

VideoID	VideoTitle	DatePublished	Views	Likes	Dislikes	Comments	ProfileID
svfVkdHgeWY	#TimsDark Experiment Tim Hortons Dark Roast Coffee	2014-08-15	2706	1479	136	275	2
ag-Mu3jHfWU	#TimsNextDoor – Serving the Neighbourhood	2014-09-26	2356	509	27	70	2
tPFomA-Gm84	\$1 Cravings Menu Haul Taco Bell	2014-08-15	770	144	83	106	1
fla4miaiXIA	Belluminati - \$1 Stacker Commercial Taco Bell	2017-12-15	4023	316	319	254	1
KelYyRvV0go	Brain Freeze - Episode 5 Taco Tales Season 1 Taco Bell	2017-01-05	4095	394	11	98	1
IJKUcn7Cy5A	Celebrating 50 Years of SUBWAY Restaurants®	2015-08-26	656	480	160	0	6

PROFILES

ProfileID	ProfileName	DateCreated
1	JanetandJohn	2016-12-15
2	TimmyTom	2015-09-30
3	MackyDee	2017-11-27
4	DonDoe	2015-07-27
5	SteveXolo	2015-10-27
6	SumiSam	2015-03-23

Restore Database

Question 3.2 Display area

3.2.1 3.2.2

NOTE:

- The **[Restore Database]** button is provided to restore your data contained in the database to the original content. If you need to test your code on the original data, you may click this button to restore data.
- Do NOT change any of the code provided.
- Code is provided to link the GUI components to the database.
- TWO variables are declared as global variables, as described in the table below.

Variable	Data type	Description
tblProfiles	TADOTable	Refers to the table named Profile
tblVideos	TADOTable	Refers to the table named Video

3.1 In this section you may ONLY use SQL statements to answer QUESTION 3.1.1 to QUESTION 3.1.5.

Code to execute the SQL statements and display the results of the queries is provided. The SQL statements are incomplete.

The section of the user interface for SQL questions is displayed below:

Question 3.1 Display area (SQL RESULTS)

3.1.1 3.1.2 3.1.3 3.1.4 3.1.5

Do the following to complete the incomplete SQL statements assigned to the variables sSQL1, sSQL2, sSQL3, sSQL4 and sSQL5 per question respectively.

3.1.1 Button [3.1.1]

Write SQL code to display the **DateCreated** and the **ProfileName** of all profiles sorted from the newest to the oldest profile created.

Example of output:

DateCreated	ProfileName
2017-11-27	MackyDee
2016-12-15	JanetandJohn
2015-10-27	SteveXolo
2015-09-30	TimmyTom
2015-07-27	DonDoe
2015-03-23	SumiSam

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3.1.2 Button [3.1.2]

The user must enter the name of a profile. Code has been provided for the profile name "**DonDoe**" to be entered in an input box and saved in a variable named **sline**.

Write SQL code to display the **DatePublished** and **earnings** of all videos that have been uploaded by the profile name stored in the variable **sline**. Both tables must be used.

The **earnings** are calculated by subtracting the number of dislikes from the number of likes and adding the number of comments. The result of this calculation is then divided by the number of views.

Earnings = (Likes – Dislikes + Comments) / Views.

The earnings must be formatted as currency to two decimal places and displayed as the heading **Earnings**.

Example of output:

DatePublished	Earnings
2015-06-08	R 0.34
2017-08-21	R 0.50
2016-06-01	R 0.31
2015-07-21	R 0.27
2015-07-07	R 0.25

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3.1.3 **Button [3.1.3]**

Write an SQL statement to display video titles [**VideoTitle**] where the number of views is greater than or equal to 1000 and the number of dislikes is less than or equal to 10.

Example of output of the first five records:

VideoTitle
Tim Hortons Drive Thru Rookies with Sid & Nate C
Starbucks Joymakers
Mary J. Blige and David Foster Perform at Seattle Store
Tim Hortons Drive Thru Rookies with Sid & Nate Surprise
Tim Hortons Drive Thru Rookies with Sid & Nate E

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3.1.4 **Button [3.1.4]**

Write an SQL statement to delete the video that was published in the year 2008.

(Code has been written to display the successfully updated table after deletion, in order of DatePublished from oldest to newest.)

Example of output:

DatePublished	VideoTitle
2010-05-04	Your Perfect Starbucks Latte
2011-04-17	One Person Can Save Trees, Together We Can Save Forests
2011-12-17	Happy Holidays from Starbucks!
2012-02-06	Dan's Everylove Story
2012-02-06	Starbucks Cup Magic for Valentine's Day

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3.1.5 **Button [3.1.5]**

Write an SQL statement to change the name of the profile named **TimmyTom** to **Tim Horton**.

(Code has been written to display the successful results.)

Example of output:

ProfileID	ProfileName	DateCreated
1	JanetandJohn	2016-12-15
2	Tim Horton	2015-09-30
3	MackyDee	2017-11-27
4	DonDoe	2015-07-27
5	SteveXolo	2015-10-27
6	SumiSam	2015-03-23

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3.2 In this section, only Delphi programming code may be used to answer QUESTION 3.2.1 and QUESTION 3.2.2.

NO marks will be awarded for SQL statements in QUESTION 3.2.

The section of the user interface for QUESTION 3.2 is shown below:



3.2.1 Button [3.2.1]

Write code to display all video titles in the richedit, **redDisplay**, that contain the single word **'the'** in the video title.

Example of output:

```
#TimsNextDoor – Serving the Neighbourhood
Future Father Of The Year - Episode 4 | Taco Tales Season 1
Jump the Boards with Sidney Crosby and Tim Hortons
Looking to watch the Solar Eclipse? ✨
McDonald's: Behold, The Micro Mac
National Taco Day: Glen And The Magic Taco | Taco Bell
The Belluminati | Commercial | Taco Bell
The Great Escape - Episode 3 | Taco Tales Season 1
The Starbucks Reserve Roastery and Tasting Room
The World's Fastest Dunkin' Run Wingsuit Commercial :60
Tim Hortons #WarmWishes | The Cup of Good Deeds
```

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3.2.2 Button [3.2.2]

Write code to delete all videos that have more than 8 dislikes.

Example of output of all records displayed in the database grid, dbgVideos:

VIDEOS								
VideoID	VideoTitle	DatePublished	Views	Likes	Dislikes	Comments	ProfileID	
▶ S6xjRrY3CWA	Dan's Coffee Run	2013-02-08	2778	326	4	32	5	
RSYdGpUsRwg	Hippo Campus breezes through a spirited version of "South"	2015-08-24	1217	374	0	10	4	
8nvqOzjq10w	Starbucks Cup Magic for Valentine's Day	2012-02-06	2112	366	8	19	5	
qQvZsnl-im8	Tim Hortons Drive Thru Rookies with Sid & Nate Surprise	2015-09-24	2405	386	8	14	2	
AfloXibCCG0	Tim Hortons Drive Thru Rookies with Sid & Nate E	2015-09-24	2440	374	7	18	2	
8i_o6dKebpk	Tims Run with Sid & Nate Game On	2016-09-07	589	334	7	26	2	

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- Enter your name and surname as a comment in the first line of the program file.
- Save your program.
- A printout of the code may be required.

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