Computing

Lesson 4: Swim Challenge Part 1

Databases and SQL

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Swim challenge

A local leisure centre is in the process of building a new swimming pool. You have been asked to set up a database for them that will help them manage their swimming lessons. Part of the database has been made for you. You need to work through the tasks on this worksheet that will require you to write, execute, and test SQL scripts to complete the database.

For this activity you will need:

- DB Browser for SQLite
- Download a copy of the database from **oaknat.uk/comp-swimdb**

Swim challenge
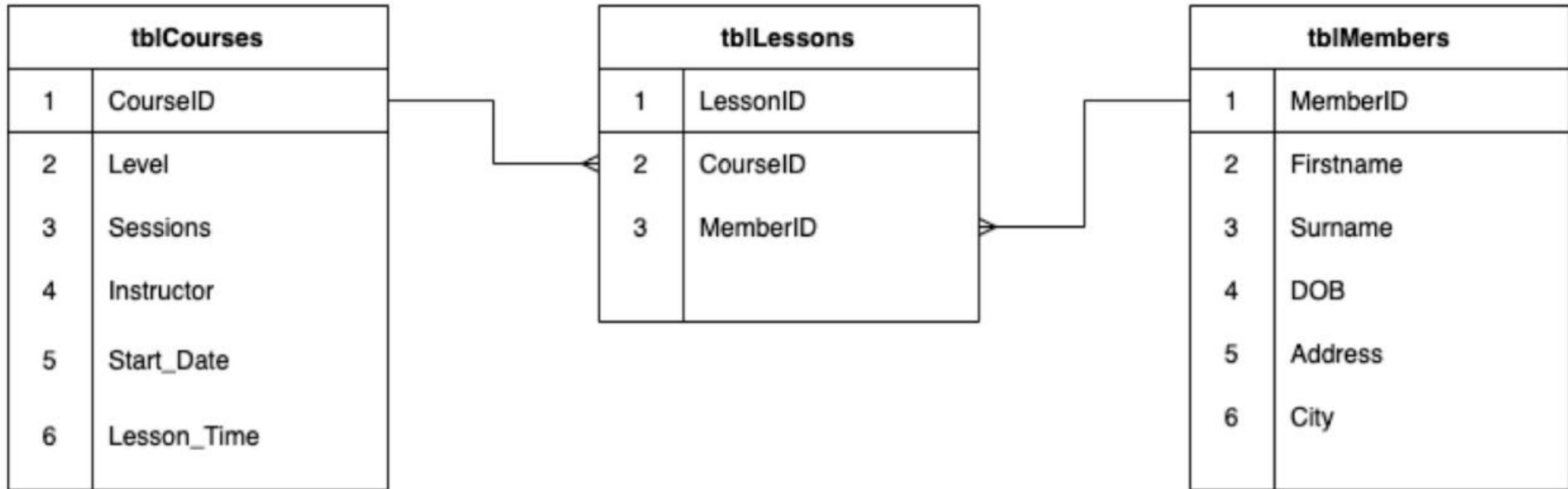
Swim challenge – Task 1: `tblLessons`

Open dbSwim.db; you will see that `tblCourses` and `tblMembers` have been created for you.

1.1 `tblLessons` hasn't been created yet. Using the diagram above, identify the primary and foreign keys:

Primary Key	
Foreign Key	
Foreign Key	

Swim challenge – Task 1: tblLessons

1.2 A partially complete SQL script to create `tblLessons` has been written below for you. Your task is to complete the script by adding the appropriate data types (Lesson 3) and to complete any other missing parts to the scripts.

```
1  CREATE TABLE tblLessons (
2  LessonID -------- PRIMARY KEY AUTOINCREMENT,
3  CourseID -------- NOT NULL,
4  MemberID -------- NOT NULL,
5  FOREIGN KEY (--------) REFERENCES tblCourses (CourseID),
6  FOREIGN KEY (--------) REFERENCES -------- (--------)
7  );
```

Swim challenge – Task 1: tblLessons

1.2 A partially complete SQL script to create `tblLessons` has been written below for you. Your task is to complete the script by adding the appropriate data types (Lesson 3) and to complete any other missing parts to the scripts.

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2  LessonID ------- PRIMARY KEY AUTOINCREMENT,
3  CourseID ------- NOT NULL,
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5  FOREIGN KEY (-------) REFERENCES tblCourses (CourseID),
6  FOREIGN KEY (-------) REFERENCES ------- (-------)
7  );
```

Now copy, paste (or type out), and execute your completed script in your database. If it doesn't work, make sure that you read the error message and check your script carefully for errors.

Swim challenge – Task 1: tblLessons

1.3 Write an SQL script that will enter some test data into tblLessons. The leisure centre has asked you to use the following as test data:

CourseID	MemberID
3	15
3	18
3	38
1	36
4	22
7	54
1	14
1	24

Hint: Look at Lesson 3 to remind you of the type of SQL query you need to use and how to structure it.

Swim challenge – Task 2: SELECT data

2.1 Run the following query:

```
1  SELECT *
2  FROM tblMembers
3  WHERE "City" = "Newcastle";
```

Explain what each line of the query does:

```
SELECT *

FROM tblMembers

WHERE "City" = "Newcastle";
```

Swim challenge – Task 2: SELECT data

Write an SQL query that will display all classes that have more than 6 sessions. You only need to display the Level and Sessions fields.

Write down your solution below:

```
1
2
3
```

How many records were found?

5

Swim challenge – Task 3: SELECT data part 2

Without using an SQL query, find out which member is enrolled on the Seniors course. Write down your answer below:

Swim challenge – Task 3: SELECT data part 2

Reorder the following lines of code to form a working SELECT query that would return the same answer as 3.1.

```
1 AND tblCourses.Level = "Seniors";
2 SELECT tblMembers.Firstname,  tblMembers.Surname
3 WHERE tblMembers.MemberID = tblLessons.MemberID
4 AND tblCourses.CourseID= tblLessons.CourseID
5 FROM tblMembers, tblCourses, tblLessons
```

Swim challenge – Task 3: SELECT data part 2

Test your solution to see if it works before writing your answer below

```
1
2
3
4
5
```

Swim challenge – Task 3: SELECT data part 2

The leisure centre wants to contact all members from Consett that are booked into lessons to let them know of a new promotion that they are eligible for.

Note: This is only members from Consett that are currently booked into lessons (not all members from Consett).

```
1
2
3
4
5
```

Swim challenge – Task 4: Updating and deleting

Two of the members have left the area and have notified the leisure centre that they no longer wish to have their details stored on the system. Write an SQL script that will delete the following two members from the tblMembers:

- Abla Baroni (46)
- Nadim Abe (8)

Hint: This query can be done in three lines, but there is more than one solution. Use more lines if you need to.

```
1
2
3
4
5
```

Swim challenge – Task 4: Updating and deleting

All of the members that have been taking part in the Ducklings class have now passed and are ready to progress into the next course up, Dippers. Write a script that moves all members currently taking the Ducklings lessons into the Dippers course.

```
1
2
3
```

Swim challenge – Task 4: Updating and deleting

Run a SELECT query to show that the above query has updated the lessons successfully. Write down your query script below.

Hint: A successful query will have moved members 36, 14, and 24.

```
1
2
3
```

Swim challenge – Task 3: SELECT data part 2

Write down the `MemberID`s of the members that are now in class 2:

Task title

- Info for students to complete the task.
- Images, will be removed from this if printed.

- Optional placeholder for image or text

Creating a network - fill in the blanks (each word is only used once)

Long text option, Oak don't particularly like running text but it's useful in some situations.

Colours below are those that should be used for tables, choices, boxes. I using those colours for text it must be bold too.

cables

server

files

video

hub

both