C2- S4-PRACTICE

*NOTE: check your **THEORY slides** to answer those questions!*

EXERCISE 1 – BOOK & AUTHORS

We want to manage books and authors:

- ✓ A book has always 1 author only
- ✓ An author could write many books.

Author
authorId
name
dateOfBirth
country

Book
bookId
title
publishYear
language

Q1 – What is the relation between Book and Author tables?

- ⇨ The relation between Book and Author tables is Many to One relation.
  - Complete the missing attributes or table to allow this relation

Book	
bookId	Int(11) PK
Title	Varchar(50)
Publish Year	Date(30)
Language	Varchar(40)
authorId	Int(11) FK

* ——— 1

Author
authorId
Name
dateOfBirth
country

Q2 – For each table, complete the following arrays, by specifying for each attribute:

- The field type (SQL type) and size
- Can be null or not?
- Is a primary key or foreign keys?

AUTHOR TABLE

Attribute name	Type / size	Can be Null?	Key
authorID	Int(11)	No	PK
Name	Varchar(30)	Yes	
dateOfBirth	Date(30)	Yes	
country	Varchar(30)	Yes	

BOOK TABLE

Attribute name	Type / size	Can be Null?	Key
BookId	Int(11)	No	PK
Title	Varchar(30)	Yes	
Publish Year	Date(30)	Yes	
Language	Varchar(30)	Yes	

Q3 – Write the SQL statement to create the 2 tables with appropriate properties

```
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| authorID    | int(11)     | NO   | PRI | NULL    |       |
| name        | varchar(30) | YES  |     | NULL    |       |
| dateOfBirht | date        | YES  |     | NULL    |       |
| country     | varchar(30) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.005 sec)
```

```
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| bookID      | int(11)     | NO   | PRI | NULL    |       |
| title       | varchar(30) | YES  |     | NULL    |       |
| publishYear | date        | YES  |     | NULL    |       |
| language    | varchar(30) | YES  |     | NULL    |       |
| authorId    | int(11)     | NO   | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.005 sec)
```

Q4– Write the statement to insert 5 books and 5 authors

- Find the book and author information on the Internet

```
MariaDB [library]> select * from books;
+--------+-------------------+-------------+----------+----------+
| bookID | title             | publishYear | language | authorId |
+--------+-------------------+-------------+----------+----------+
|      1 | Sophath           | 0000-00-00  | Khmer    |        8 |
|      2 | Mealea Doung Chet | 0000-00-00  | Khmer    |       10 |
|      3 | Harry Potter      | 0000-00-00  | Engish   |        9 |
|      4 | avartar           | 0000-00-00  | English  |       12 |
+--------+-------------------+-------------+----------+----------+
4 rows in set (0.000 sec)
```

```
MariaDB [library]> select * from books;
+--------+-------------------+-------------+----------+----------+
| bookID | title             | publishYear | language | authorId |
+--------+-------------------+-------------+----------+----------+
|      1 | Sophath           | 0000-00-00  | Khmer    |        8 |
|      2 | Mealea Doung Chet | 0000-00-00  | Khmer    |       10 |
|      3 | Harry Potter      | 0000-00-00  | Engish   |        9 |
|      4 | avartar           | 0000-00-00  | English  |       12 |
|      5 | Cinderellar       | 0000-00-00  | English  |       11 |
+--------+-------------------+-------------+----------+----------+
5 rows in set (0.000 sec)
```

Q5– Write the SQL statement to **delete 3 of your books** from the database

```
MariaDB [library]> delete from books where bookID=5;
Query OK, 1 row affected (0.004 sec)

MariaDB [library]> delete from books where bookID=4;
Query OK, 1 row affected (0.003 sec)

MariaDB [library]> delete from books where bookID=3;
Query OK, 1 row affected (0.004 sec)

MariaDB [library]> select * from books;
+--------+-------------------+-------------+----------+----------+
| bookID | title             | publishYear | language | authorId |
+--------+-------------------+-------------+----------+----------+
|      1 | Sophath           | 0000-00-00  | Khmer    |        8 |
|      2 | Mealea Doung Chet | 0000-00-00  | Khmer    |       10 |
+--------+-------------------+-------------+----------+----------+
2 rows in set (0.000 sec)
```

EXERCISE 2 – USERS & POSTS

We want to manage **users** and **posts** (like posts on Facebook)

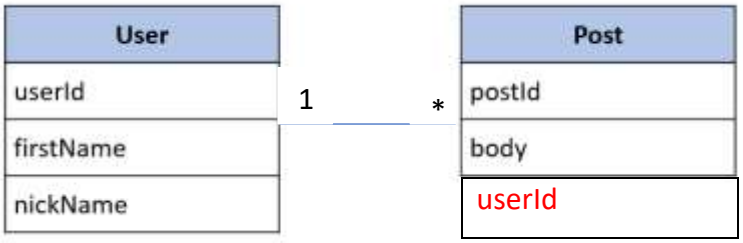
- A post is related to **1 user only**
    - A post has a body (the text of the post)
- User can have **many posts**
    - A user has a first name, and a nick name (optional)

User
userId
firstName
nickName

Post
postId
body

Q1 – What is the relation between User and Post Table?

- Complete the missing attributes or table to allow this relation



Q2 – For each table, complete the following arrays, by specifying for each attribute:

- The attribute type (SQL type) and size
- Can be null or not?
- Is a primary key or foreign keys?

USER TABLE

Attribute name	Type / size	Null?	Key
userID	Int(11)	No	PK
FirstName	Varchar(50)	Yes	
NickName	Varchar(50)	Yes	

POST TABLE

Attribute name	Type / size	Null?	Key
postID	Int(11)	No	PK
body	Varchar(255)	Yes	
userID	Int(11)	Yes	FK

Q3 – Write the SQL statement to create the 2 tables with appropriate properties

```
+----------+-------------+------+-----+---------+----------------+
| Field    | Type        | Null | Key | Default | Extra          |
+----------+-------------+------+-----+---------+----------------+
| userID   | int(11)     | NO   | PRI | NULL    | auto_increment |
| FirtName | varchar(50) | YES  |     | NULL    |                |
| NickName | varchar(50) | YES  |     | NULL    |                |
+----------+-------------+------+-----+---------+----------------+
3 rows in set (0.005 sec)
```

```
MariaDB [library]> desc posts;
+--------+--------------+------+-----+---------+----------------+
| Field  | Type         | Null | Key | Default | Extra          |
+--------+--------------+------+-----+---------+----------------+
| postID | int(11)      | NO   | PRI | NULL    | auto_increment |
| body   | varchar(255) | YES  |     | NULL    |                |
| userid | int(11)      | NO   | MUL | NULL    |                |
+--------+--------------+------+-----+---------+----------------+
3 rows in set (0.006 sec)
```

Q4– Write the statement to insert the following users and posts

Notes:

- ---- means: no value (the nickname is optional!)
- We don't specify the KEY, it's your business!

USERS

First name	Nick name
Ronan	roro
Sokea	----
Edouard	doudou

```
MariaDB [library]> select * from user;
+--------+----------+----------+
| userID | FirtName | NickName |
+--------+----------+----------+
|      1 | Ronan    | roro     |
|      2 | Sokea    |          |
|      3 | Edouard  | doudou   |
+--------+----------+----------+
3 rows in set (0.000 sec)
```

POSTS

Post body	From
Hello all !	Ronan
I like rice	Ronan
YES YES	Sokea

```
MariaDB [library]> select * from posts;
+--------+-------------+--------+
| postID | body        | userid |
+--------+-------------+--------+
|      1 | Hello all!  |      1 |
|      2 | I like rice |      1 |
|      3 | YES YES     |      2 |
+--------+-------------+--------+
3 rows in set (0.000 sec)
```

Q5– Write the statement to delete the user Edouard

- What's happen? Can we delete it? Why?

```
MariaDB [library]> delete from user where FirtName = "Edouard";
Query OK, 1 row affected (0.004 sec)

MariaDB [library]> select * from user;
+--------+----------+----------+
| userID | FirtName | NickName |
+--------+----------+----------+
|      1 | Ronan    | roro     |
|      2 | Sokea    |          |
+--------+----------+----------+
2 rows in set (0.000 sec)
```

Yes, we can. Because when we wrote the command we have a specific column and values to delete it.

Q6– Write the statement to delete the user Ronan

- What's happen? Can we delete it? Why?

No, we can't. Because the userID of user Ronan is the foreign key of the posts, so we can't delete it.

Q7– Write SQL statement to remove the rows related to Ronan user:

- Hello all!
- I like rice

```
MariaDB [library]> delete from posts where body = "Hello all!";
Query OK, 1 row affected (0.004 sec)

MariaDB [library]> delete from posts where body = "I like rice";
Query OK, 1 row affected (0.003 sec)

MariaDB [library]> select * from posts;
+--------+---------+--------+
| postID | body    | userid |
+--------+---------+--------+
|      3 | YES YES |      2 |
+--------+---------+--------+
1 row in set (0.000 sec)

MariaDB [library]>
```

Q8– now try again to delete the user Ronan

- What's happen? Can we delete it? What can you conclude?

```
MariaDB [library]> delete from user where userID = 1;
Query OK, 1 row affected (0.002 sec)

MariaDB [library]> select * from user;
+--------+----------+----------+
| userID | FirtName | NickName |
+--------+----------+----------+
|      2 | Sokea    |          |
+--------+----------+----------+
1 row in set (0.000 sec)

MariaDB [library]>
```

Yes, we can. Because we deleted the posts' records that have foreign key of user Ronan.

Q9– Add a new POST in the POST table with a userId which does not exist in the User table (ex: 45)

- What's happen? Why?

We can't add new post in the post table with a userId that doesn't exist in the user table. Because in the user table doesn't have userId 45.