

## 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? Why?

Relation between Book and Author tables is many to one because author can write many books but only book have write by only one author.

- Complete the missing attributes or table to allow this relation

Author
authorID
name
dateOfBirth
country

One      many

Book
bookID
Title
publishYear
language
authorID

**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	No, it can't	Primary key
name	varchar(15)	No, it can't	
dateOfBirth	Date	Yes, it can	
country	Varchar(25)	Yes, it can	

**BOOK TABLE**

Attribute name	Type / size	Can be Null?	Key
bookID	Int	No, it can't	Primary key
Title	Varchar(100)	No, it can't	
publishYear	date	No, it can't	
language	Varchar(100)	No, it can't	
authorID	int	No, it can't	Foreign key

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

```
MariaDB [practice]> create table authors(  
  -> authorID int auto_increment,  
  -> name varchar(15) NOT NULL,  
  -> dateOfBirth date,  
  -> country varchar(25),  
  -> PRIMARY KEY(authorID)  
  -> );
```

Query OK, 0 rows affected (0.021 sec)

```
MariaDB [practice]> desc authors  
  -> ;
```

Field	Type	Null	Key	Default	Extra
authorID	int(11)	NO	PRI	NULL	auto_increment
name	varchar(15)	NO		NULL	
dateOfBirth	date	YES		NULL	
country	varchar(25)	YES		NULL	

4 rows in set (0.006 sec)

```
MariaDB [practice]> create table books(  
  -> bookID int auto_increment,  
  -> Title varchar(100) NOT NULL,  
  -> publishYear date NOT NULL,  
  -> language varchar(100) NOT NULL,  
  -> authorID int NOT NULL,  
  -> PRIMARY KEY(bookID)  
  -> );
```

Query OK, 0 rows affected (0.022 sec)

```
MariaDB [practice]> desc books;
```

Field	Type	Null	Key	Default	Extra
bookID	int(11)	NO	PRI	NULL	auto_increment
Title	varchar(100)	NO		NULL	
publishYear	date	NO		NULL	
language	varchar(100)	NO		NULL	
authorID	int(11)	NO		NULL	

5 rows in set (0.006 sec)

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

- Find the book and author information on the Internet

```
MariaDB [practice]> select * from authors;
+-----+-----+-----+-----+
| authorID | name          | dateOfBirth | country |
+-----+-----+-----+-----+
|          1 | Gray Chapman | 1938-01-10  | American |
+-----+-----+-----+-----+
1 row in set (0.000 sec)
```

```
MariaDB [practice]> insert into authors (name, dateOfBirth, country) values
-> ('Dale Carnegie', '1888-11-24', 'American'),
-> ('Shirley Arora', '1930-06-03', 'American'),
-> ('Stephen King', '1947-09-21', 'Spanish'),
-> ('Erica Jong', '1942-03-26', 'American')
-> ;
Query OK, 4 rows affected (0.008 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
MariaDB [practice]> select * from authors;
+-----+-----+-----+-----+
| authorID | name          | dateOfBirth | country |
+-----+-----+-----+-----+
|          1 | Gray Chapman | 1938-01-10  | American |
|          2 | Dale Carnegie | 1888-11-24  | American |
|          3 | Shirley Arora | 1930-06-03  | American |
|          4 | Stephen King  | 1947-09-21  | Spanish  |
|          5 | Erica Jong    | 1942-03-26  | American |
+-----+-----+-----+-----+
5 rows in set (0.000 sec)
```

```
MariaDB [practice]> insert into books(Title,publishYear,language,authorID) values
-> ('Tiger on the mountain', '1960-01-01', 'English', '1'),
-> ('How to win friend and influence people', '1936-10-01', 'English', '2'),
-> ('Five languages of love', '1992-01-01', 'English', '3'),
-> ('The power of love', '2001-02-01', 'English', '4'),
-> ('Follow your heart', '2005-12-12', 'English', '5')
-> ;
Query OK, 5 rows affected (0.004 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
MariaDB [practice]> select * from books;
+-----+-----+-----+-----+-----+
| bookID | Title                                     | publishYear | language | authorID |
+-----+-----+-----+-----+-----+
|          1 | Tiger on the mountain                     | 1960-01-01  | English  |          1 |
|          2 | How to win friend and influence people    | 1936-10-01  | English  |          2 |
|          3 | Five languages of love                   | 1992-01-01  | English  |          3 |
|          4 | The power of love                        | 2001-02-01  | English  |          4 |
|          5 | Follow your heart                        | 2005-12-12  | English  |          5 |
+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```

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

```
MariaDB [practice]> delete from books where bookID=1;
Query OK, 1 row affected (0.011 sec)

MariaDB [practice]> delete from books where bookID=2;
Query OK, 1 row affected (0.005 sec)

MariaDB [practice]> delete from books where bookID=3;
Query OK, 1 row affected (0.006 sec)

MariaDB [practice]> select * from books;
+-----+-----+-----+-----+-----+
| bookID | Title           | publishYear | language | authorID |
+-----+-----+-----+-----+-----+
|      4 | The power of love | 2001-02-01  | English  |      4    |
|      5 | Follow your heart | 2005-12-12  | English  |      5    |
+-----+-----+-----+-----+-----+
2 rows in set (0.001 sec)
```

## EXERCISE 2 – USERS & POSTS

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

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

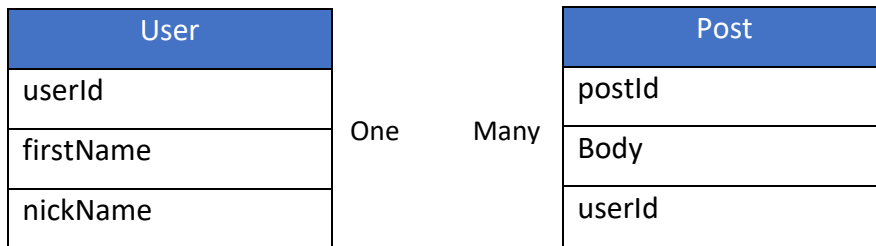
User
userId
firstName
nickName

Post
postId
body

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

Relation between User and Post Table is one to many because User can have many posts and one post is related by one user only.

- 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	Null	Primary key
firstName	Varchar(100)	Null	
nickName	Varchar(100)	Not null	

**POST TABLE**

Attribute name	Type / size	Null?	Key
postId	int	Null	Primary key
Body	Varchar(255)	Not null	
userId	int	Null	

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

```
MariaDB [practice]> create table users(
  -> userId int,
  -> firstName varchar(255) NOT NULL,
  -> nickName varchar(255),
  -> PRIMARY KEY(userId)
  -> );
Query OK, 0 rows affected (0.036 sec)

MariaDB [practice]> desc users;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| userId     | int(11)       | NO   | PRI | NULL    |       |
| firstName  | varchar(255)  | NO   |     | NULL    |       |
| nickName   | varchar(255)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.006 sec)
```

```
MariaDB [practice]> create table posts(
  -> postId int auto_increment,
  -> body varchar(255) NOT NULL,
  -> userID int,
  -> PRIMARY KEY (postId)
  -> );
Query OK, 0 rows affected (0.024 sec)

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

```
MariaDB [practice]> alter table posts change userID userId int;
Query OK, 0 rows affected (0.010 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
MariaDB [practice]> desc posts;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| postId     | int(11)       | NO   | PRI | NULL    | auto_increment |
| body       | varchar(255)  | NO   |     | NULL    |              |
| userId     | int(11)       | YES  |     | 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

#### POSTS

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

```
MariaDB [practice]> insert into users(firstName,nickName) values
-> ('Ronan','roro'),
-> ('Sokea',NULL),
-> ('Edouard','doudou')
-> ;
```

```
Query OK, 3 rows affected (0.005 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
MariaDB [practice]> select * from users;
```

```
+-----+-----+-----+
| userId | firstName | nickName |
+-----+-----+-----+
|      1 | Ronan     | roro     |
|      2 | Sokea     | NULL     |
|      3 | Edouard   | doudou   |
+-----+-----+-----+
3 rows in set (0.000 sec)
```

```
MariaDB [practice]> insert into posts(body,userID) values
-> ('Hello all !','1'),
-> ('I like rice','1'),
-> ('YES YES','2');
```

```
Query OK, 3 rows affected (0.005 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
MariaDB [practice]> 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?

It will delete record in table. Yes, we can delete it. Because we write statement 'delete from users where userId =3;'

```
MariaDB [practice]> delete from users where firstName='Edouard';
Query OK, 1 row affected (0.004 sec)
```

userId	firstName	nickName
1	Ronan	roro
2	Sokea	NULL

**Q6–** Write the statement to delete the user Ronan

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

It will delete record in table. Yes, we can delete it. Because we write statement 'delete from users where userId =3;'

```
MariaDB [practice]> delete from users where firstName='Ronan';
Query OK, 1 row affected (0.004 sec)
```

```
MariaDB [practice]> select * from users;
+-----+-----+-----+
| userId | firstName | nickName |
+-----+-----+-----+
|      2 | Sokea     | NULL     |
+-----+-----+-----+
1 row in set (0.000 sec)
```

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

- Hello all!
- I like rice

```
MariaDB [practice]> delete from posts where postId=1;
Query OK, 1 row affected (0.005 sec)
```

```
MariaDB [practice]> delete from posts where postId=2;
Query OK, 1 row affected (0.005 sec)
```

```
MariaDB [practice]> select * from posts;
+-----+-----+-----+
| postId | body      | userID |
+-----+-----+-----+
|      3 | YES YES   |      2 |
+-----+-----+-----+
1 row in set (0.000 sec)
```

**Q8**– now try again to delete the user Ronan

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

It will error. No, we cannot delete it because the firstName of Ronan doesn't have in table users.

```
MariaDB [practice]> delete from users where firstName=Ronan;  
ERROR 1054 (42S22): Unknown column 'Ronan' in 'where clause'  
MariaDB [practice]>
```

**Q9**– Add a new POST in the POST table with a userId which does not exist in the User table

(ex: userID = 45)

```
MariaDB [practice]> insert into posts(body,userID) values  
-> ('I love you'),  
-> ('45');  
ERROR 1136 (21S01): Column count doesn't match value count at row 1  
MariaDB [practice]>
```

- What is happen? Why?
- Cannot add post because column count does not match value.