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 and only 1
- ✓ An author could write zero or many books.

Author
authorId
name
dateOfBirth
country

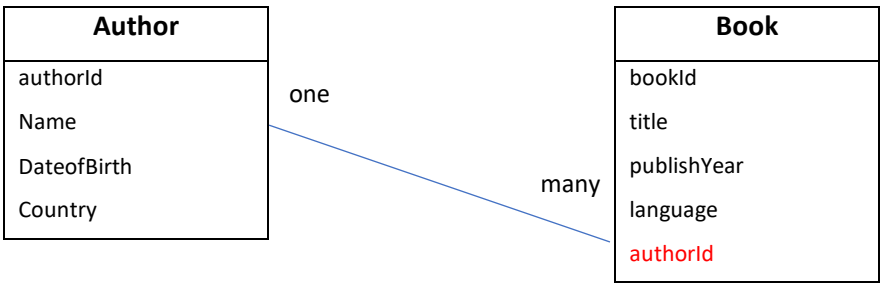
Book
bookId
title
publishYear
language

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

The relation between Book and Author tables is one to many because

- one author can write many books.
- A book is written by one author.
- That is why relation between book and author is one to many.

- Complete the missing field or table to allow this relation



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

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

Author		
PK	authorId	int(10) auto_increment not null
	Name	varchar (100)
	DateofBirth	date
	Country	varchar (100)

Book		
PK	bookId	int(10) auto_increment not null
	title	varchar (100)
	publishYear	date
	language	varchar (100)
FK	authorID	int (100)

AUTHOR TABLE

Field	Type / size	Null?	Key
authorId	Int(10)	no	PRI
Name	Varchar(100)	no	
DateofBirth	Date	yes	
Country	Varchar(100)	yes	

BOOK TABLE

Field	Type / size	Null?	Key
bookId	Int(10)	no	PRI
title	Varchar(100)	yes	
publishYear	date	no	
language	Varchar(100)	yes	
authorID	Int(100)	no	MUL

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

```
create table Author (
    authorId int(10) auto_increment not null primary key,
    name varchar (100) not null,
    dateofbirth date,
    country varchar(100)
)
```

```
create table Book(

    bookId int(10) auto_increment primary key,
    title varchar(100),
    publishYear date not null,
    language varchar(100),
    authorId int,
```

```
    foreign key (authorId) references Author(authorId)
);
```

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

- Find the book and author information on internet

```
+----------+-----------------+-------------+----------+
| authorID | name            | dateofbirth | country  |
+----------+-----------------+-------------+----------+
|        1 | J. K. Rowling   | 1965-07-31  | England  |
|        2 | George Saunders | 1958-12-02  | America  |
|        3 | Mao Samnang     | 1959-04-29  | Cambodia |
|        4 | Kong Bunchhoeun | 1939-10-18  | Cambodia |
|        5 | Marcel Proust   | 1871-07-10  | French   |
+----------+-----------------+-------------+----------+
```

bookId	title	publishYear	Language	AuthorId
1	Teuk Ler Sleuk Chhouk	2008	Khmer	3
2	Harry potter	1997	English	1
3	In search of lost time	1913	English	5
4	Tenth of December	2013	English	2
5	Troubled blood	2020	English	1

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

```
        delete from book where authorId = 1;
        delete from book where bookId = 3 ;
```

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?

The relation between User and Post Table is one to many because one user can post many posts.

User
usesrId
name
nickname

Post
postId
body
userId

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

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

USER TABLE

Field	Type / size	Null?	Key
userId	Int(20)	No	PRI
name	Varchar(100)	No	
nickname	Varchar(100)	Yes	

POST TABLE

Field	Type / size	Null?	Key
postId	Int (20)	No	PRI
Body	Varchar(100)	No	
userId	Int(20)	No	MUL

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

```
Create table user (
```

```
    userId int(20) auto_increment not null,
    name varchar(100) not null,
    nickname varchar(100),
    primary key (userId)
);
```

```
Create table post (
    postId int(20) auto_increment primary key,
    body varchar(100) not null,
    userId int(20),
    primary key (postId),
    foreign key (userId) references user(userId)
);
```

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

Notes:

- ---- means: no value
- We don't specify the KEY, it's your business!

USERS

First name	Nick name
Ronan	roro
Sokea	chandy
Edouard	doudou

```
insert into user
    (name, nickname)
values
    ('Ronan', 'roro'),
    ('Sokea', 'roro'),
    ('Edouard', 'doudou');
```

POSTS

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

```
insert into post
    (body, userId)
values
    ('Hello all!', 1),
    ('I like rice',1),
    ('YES YES ', 2);
```

Q5– Write the statement to delete the user Edouard

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

```
    delete from user where name = 'Edouard' ;
```

of course we can delete user Edouard completely because user Edouard still has not connection with table post yet.

Q6– Write the statement to delete the user Ronan

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

Deleting 'user Ronan',then , got a ERROR 1451 (23000). So we cannot delete user Ronan because it is a parent row: a foreign key constraint fails (`facebook`.`post`, ONSTRAINT `post_ibfk_1` FOREIGN KEY (`userid`) REFERENCES `user` (`userid`)).

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

- Hello all!
- I like rice

```
delete from post where user='Ronan' ;
```

Q8– now try again to delete the user Ronan

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

After deleted all records from post table which related to user Ronan, we also can delete user Ronan because no data connected anymore.

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?

it will be an error because userid = 45 did not exist in user table. So we cannot insert any userid that is not exit in user table.