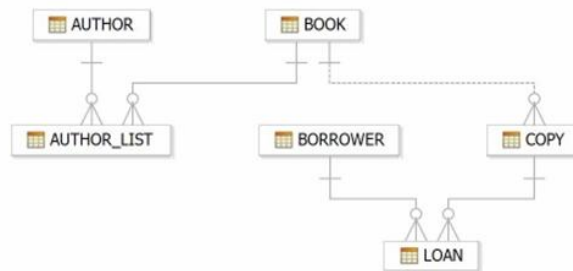


Experiment 4

TITLE: DDL (Data Definition Language) commands with Data Constraints

Objective: To understand the concept of data constraints that is enforced on data being stored in the table. Focus on Primary Key, The Foreign Key and constraints.

Review this diagram



1. Create table **AUTHOR** = {Author_ID , Lastname, Firstname, Email, City, Country}

Where:

Author_ID – text data type, 5 characters, primary key

Lastname – text data type, 15 characters, not null

Firstname – text data type, 15 characters, not null

Email – text data type, 40 characters,

City – text data type, 15 characters,

Country – text data type, 15 characters,

```
2 • create table AUTHOR(
3   Author_ID varchar(5) primary key,
4   Lastname varchar(15) not null,
5   Firstname varchar(15) not null,
6   Email varchar(40),
7   City varchar(15),
8   Country varchar(15)
9 );
10 • desc AUTHOR;
```

Field	Type	Null	Key	Default	Extra
Author_ID	varchar(5)	NO	PRI	NULL	
Lastname	varchar(15)	NO		NULL	
Firstname	varchar(15)	NO		NULL	
Email	varchar(40)	YES		NULL	
City	varchar(15)	YES		NULL	
Country	varchar(15)	YES		NULL	

2. Create Table BOOK={ Book_ID, Book_Title, Copies)

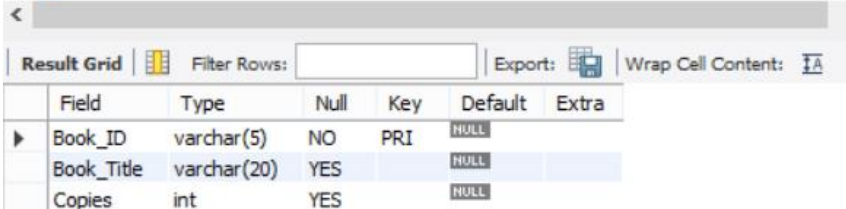
Where :

Book_ID – text data type, 5 characters Primary Key Start With Character **B**

Book_Title - Text data Type Not Null

Copies- No.of copies Data Type int always greater the 2

```
12 • create table BOOK(  
13     Book_ID varchar(5) primary key check(Book_ID like 'B%'),  
14     Book_Title varchar(20),  
15     Copies int check(Copies > 2)  
16 );  
17 • desc BOOK;
```



Field	Type	Null	Key	Default	Extra
Book_ID	varchar(5)	NO	PRI	NULL	
Book_Title	varchar(20)	YES		NULL	
Copies	int	YES		NULL	

3. Create table AUTHOR_LIST = {Author_ID ,Book_ID , Role}

Where:

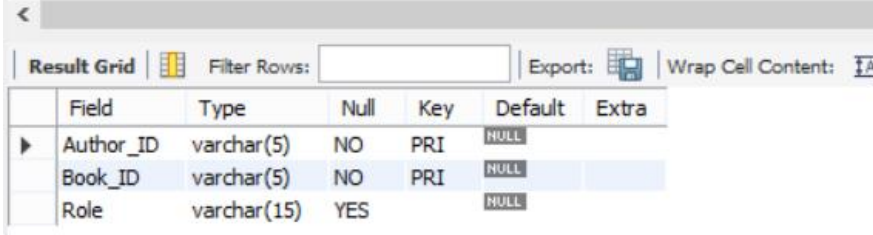
Author_ID – text data type, 5 characters, referenced by Author_ID from AUTHOR table

Book_ID – text data type, 5 characters

Role – text data type, 15 characters

and primary key is: Author_ID, Book_ID

```
19 • create table AUTHOR_LIST(  
20     Author_ID varchar(5),  
21     Book_ID varchar(5),  
22     Role varchar(15),  
23     primary key (Author_ID, Book_ID),  
24     foreign key (Author_ID) references AUTHOR(Author_ID)  
25 );  
26 • desc AUTHOR_LIST;
```



Field	Type	Null	Key	Default	Extra
Author_ID	varchar(5)	NO	PRI	NULL	
Book_ID	varchar(5)	NO	PRI	NULL	
Role	varchar(15)	YES		NULL	

4. Add four records in each tables AUTHOR, BOOK, BOOK_LIST.

```

28 • insert into AUTHOR values("A001" , "Smith" , "John" , "john@email.com" , "New York" , "USA");
29 • insert into AUTHOR values("A002" , "Johnson" , "Emily" , "emily@email.com" , "London" , "UK");
30 • insert into AUTHOR values("A003" , "Lee" , "David" , "david@email.com" , "Sydney" , "Australia");
31 • insert into AUTHOR values("A004" , "Kim" , "Jinyoung" , "kim@email.com" , "Seoul" , "South Korea");
32 • select * from AUTHOR;

```

Author_ID	Lastname	Firstname	Email	City	Country
A001	Smith	John	john@email.com	New York	USA
A002	Johnson	Emily	emily@email.com	London	UK
A003	Lee	David	david@email.com	Sydney	Australia
A004	Kim	Jinyoung	kim@email.com	Seoul	South Korea
NULL	NULL	NULL	NULL	NULL	NULL

```

34 • insert into BOOK values("B001" , "The Great Gatesby" , 5);
35 • insert into BOOK values("B002" , "Pride and Prejudice" , 10);
36 • insert into BOOK values("B003" , "Harry Potter" , 30);
37 • insert into BOOK values("B004" , "1984" , 6);
38 • select * from BOOK;

```

Book_ID	Book_Title	Copies
B001	The Great Gatesby	5
B002	Pride and Prejudice	10
B003	Harry Potter	30
B004	1984	6
NULL	NULL	NULL

```

40 • insert into AUTHOR_LIST values("A001" , "B001" , "Author");
41 • insert into AUTHOR_LIST values("A002" , "B002" , "Author");
42 • insert into AUTHOR_LIST values("A003" , "B003" , "Author");
43 • insert into AUTHOR_LIST values("A004" , "B004" , "Author");
44 • select * from AUTHOR_LIST;

```

Author_ID	Book_ID	Role
A001	B001	Author
A002	B002	Author
A003	B003	Author
A004	B004	Author
NULL	NULL	NULL

5. Alter structure of table AUTHOR_LIST add the field Publisher data type of 30

Character.

```
46 • alter table AUTHOR_LIST add Publisher varchar(30);  
47 • select * from AUTHOR_LIST;
```

<				
Result Grid				
Filter Rows:				
Edit: Export/Import:				
	Author_ID	Book_ID	Role	Publisher
▶	A001	B001	Author	NULL
	A002	B002	Author	NULL
	A003	B003	Author	NULL
	A004	B004	Author	NULL
*	NULL	NULL	NULL	NULL