Green University of Bangladesh
Department of Computer Science and Engineering(CSE)

Faculty of Sciences and Engineering
Semester: (Spring, Year:2021), B.Sc. in CSE (Day)

LAB REPORT NO #1
Course Title:Database System lab
Course Code:CSE210 Section:PC-193D

Lab Experiment Name: Implementation and Integrity Constraints in MySQL.

Student Details

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Lab Date : 03.07.2021
Submission Date : 09.07.2021
Course Teacher's Name : MD. Moshiur Rahman

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Lab Report Status
Marks: …… Signature:.....

Comments:..... Date:.....

❖ TITLE OF THE LAB EXPERIMENT:

Implementation of Integrity constraints in MySQL(not null, null, unique, primary key, foreign key, composite key,auto increment) and modifying MySQL databases and Updating Data in MySQL Table (column modification, value update).

❖ OBJECTIVES/AIM:

In this lab report, We will learn how to Integrity constraints in MySQL like not null, null, unique, primary key, foreign key, composite key,auto increment.And also modifying MySQL databases and Updating Data in MySQL Table.

❖ PROCEDURE / ANALYSIS / DESIGN:

First of all we will start the MaraDB server and will write all our queries on that server.We will do this by **XAMPP** software.

❖ IMPLEMENTATION:

- ### MySQL NOT NULL constraints:

Firstly, We will create a database and also create a table with these constraints.

```
CREATE TABLE publishers(
    pub_id int NOT NULL PRIMARY KEY,
    name varchar(100) NOT NULL,
    city varchar(100) NOT NULL,
    phone_no varchar(15)
    );
```

OUTPUT:

pub_id	name	city	phone_no

- **MySQL “PRIMARY KEY” constraints:**

The following SQL creates a “PRIMARY KEY” on the "book_id" column is created:

```
CREATE TABLE books(
    book_id int NOT NULL PRIMARY KEY,
    pub_id int,
    title varchar(150),
    price int,
    page_no int,
    book_type varchar(100),
    FOREIGN KEY (pub_id) REFERENCES publishers(pub_id)
    );
```

OUTPUT:

book_id	pub_id	title	price	page_no	book_type

```
CREATE TABLE members(
    card_no int NOT NULL PRIMARY KEY,
    surname varchar(100),
    name varchar(100),
    address varchar(255),
    birthday date,
    gender varchar(20),
    phone_no varchar(15)
    );
```

OUTPUT:

book_id	pub_id	title	price	page_no	book_type

```sql
CREATE TABLE employee(
    emp_id int NOT NULL PRIMARY KEY,
    surname varchar(100),
    name varchar(100),
    birthday date,
    emp_date date
    );
```

OUTPUT:

book_id	pub_id	title	price	page_no	book_type

- **MySQL “FOREIGN KEY” constraints:**

The following SQL creates a “FOREIGN KEY” on the "book_id","card_no","emp_id" is created:

```sql
CREATE TABLE books_loan(
    loan_id int NOT NULL PRIMARY KEY,
    book_id int,
    card_no int,
    emp_id int,
    dateout date,
    duedate date,
    penalty float,
    FOREIGN KEY (book_id) REFERENCES books (book_id),
    FOREIGN KEY (card_no) REFERENCES members (card_no),
    FOREIGN KEY (emp_id) REFERENCES employee (emp_id)
    );
```

OUTPUT:

loan_id	book_id	card_no	emp_id	dateout	duedate	penalty

- **MySQL Inserting values and check values:**

```
INSERT INTO publishers(pub_id,name,city,phone_no)
VALUES (100,'Jahid','Narayangonj','01885523042'),
(101,'Azmery','Narayangonj','01885523045');
```

OUTPUT:

+ Options

	pub_id	name	city	phone_no
Edit Copy Delete	100	Jahid	Narayangonj	01885523042
Edit Copy Delete	101	Azmery	Narayangonj	01885523045

```
INSERT INTO books (book_id,pub_id,title,price,page_no,book_type)
VALUES(1001,100,'database',300,704,'Educational'),
(1002,100,'database',300,704,'Educational'),
(1003,100,'database',300,704,'Educational');
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	database	300	704	Educational
Edit Copy Delete	1002	100	database	300	704	Educational
Edit Copy Delete	1003	100	database	300	704	Educational

- **MySQL databases modifying and Updating Data in MySQL Table (column modification, value update, MAX,MIN Values check).**

```
1 UPDATE books
2 set title = 'Operating system'
3 WHERE book_id = 1001;
```

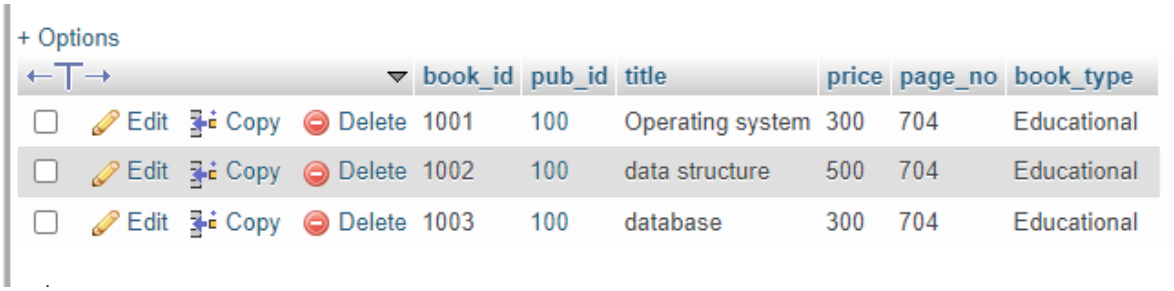
OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	database	300	704	Educational
Edit Copy Delete	1003	100	database	300	704	Educational

```sql
UPDATE books set title = 'data structure',
price = 500
WHERE book_id = 1002;
```

OUTPUT:



+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	data structure	500	704	Educational
Edit Copy Delete	1003	100	database	300	704	Educational

```sql
UPDATE books set title = 'data structure',
price = 500
WHERE title = 'database' AND page_no = 704;
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	data structure	500	704	Educational
Edit Copy Delete	1003	100	data structure	500	704	Educational

```
1 SELECT * FROM book
2 LIMIT 2;
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	data structure	500	704	Educational

```sql
INSERT INTO books
(book_id,pub_id,title,price,page_no,book_type)
VALUES
(1005,101,'compiler design',600,900,'Engineering');
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	data structure	500	704	Educational
Edit Copy Delete	1003	100	data structure	500	704	Educational
Edit Copy Delete	1005	101	compiler design	600	900	Engineering

```sql
SELECT * FROM books ORDER BY title;
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1005	101	compiler design	600	900	Engineering
Edit Copy Delete	1002	100	data structure	500	704	Educational
Edit Copy Delete	1003	100	data structure	500	704	Educational
Edit Copy Delete	1001	100	Operating system	300	704	Educational

```
1 SELECT * FROM books
2 ORDER BY title DESC;
```

OUTPUT:

+ Options

	book_id	pub_id	title	price	page_no	book_type
Edit Copy Delete	1001	100	Operating system	300	704	Educational
Edit Copy Delete	1002	100	data structure	500	704	Educational
Edit Copy Delete	1003	100	data structure	500	704	Educational
Edit Copy Delete	1005	101	compiler design	600	900	Engineering

```
1 SELECT MIN(price) FROM books;
```

OUTPUT:

MIN(price)
300

```
1 SELECT MAX(price) FROM books;
```

OUTPUT:

+ Options

MAX(price)
600

❖ TEST RESULT / OUTPUT:

Run code successfully in MariaDB server by using XAMPP software and checked the validity.

❖ ANALYSIS AND DISCUSSION:

The lab report is usefull to Mysql to insert values, modification column and updating column.I did not face any problem when I work MariaDB.

❖ SUMMARY:

In this lab report, We have learn how to MySQL modification of tables and columns and some integrity.We executed our code in the xampp software.