



Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Fall, Year:2023), B.Sc. in CSE (Day)

Lab Report NO: 02
Course Title: Database System Lab
Course Code: CSE-210 Section: D12

Lab Experiment Name: Implementation of Integrity Constraints in MySQL

Student Details

Name		ID
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Lab Date : 10-11-2023
Submission Date : 10-18-2023
Course Teacher's Name : Wahia Tasnim

Lab Report Status

Marks:

Signature:.....

Comments:.....

Date:.....

1. PROBLEM

- Create a Database with three tables.
- Assign primary key for each table.
- Assign a unique in at least two tables.
- Implement foreign key constraint in at least one table.
- Insert Data in each table.
- Browse data for each table.

2. OBJECTIVES/AIM

The main objectives of this lab exercise are:

- Data Organization: Create structured tables (student1, student2, and student3) to effectively store student information and their registration details.
- Data Integrity: Enforce data integrity by using primary keys and unique constraints to ensure accuracy and prevent duplicate or incorrect entries.
- Relationship Establishment: Establish a relationship between student information (student2) and student registrations (student3) through a foreign key, enabling efficient tracking of students and their associated registration records.

3. IMPLEMENTATION

Code:

Creating Table:

```
CREATE DATABASE Database3;
```

```
CREATE TABLE student1(id int PRIMARY KEY, name varchar(20), age int, mobile_number int UNIQUE);
```

```
CREATE TABLE student2(id int PRIMARY KEY, name varchar(20), age int, mobile_number int UNIQUE);
```

```
CREATE TABLE student3(registration_id int PRIMARY KEY, id int, name varchar(20), age int, mobile_number int UNIQUE, FOREIGN KEY(id) REFERENCES student2(id));
```

Insert Data:

```
INSERT INTO student1(id, name, age, mobile_number)
VALUES (221, "Raiyan", 23, 01913356789), (222, "Akash", 22, 01615556789), (223, "Gourab", 24,
01519956789);
```

```
INSERT INTO student2(id, name, age, mobile_number)
VALUES (221, "Raiyan", 23, 01913356789), (222, "Akash", 22, 01615556789), (223, "Gourab", 24,
01519956789);
```

```
INSERT INTO student3(registration_id, id, name, age, mobile_number)
VALUES (221902113, 221, "Raiyan", 23, 01913356789), (221902114, 222, "Akash", 22,
01615556789), (221902115, 223, "Gourab", 24, 01519956789);
```

4. TEST RESULT / OUTPUT



Figure 1: Database3 with 3 tables.










<div><div><div>↩</div><div>T</div><div>→</div></div><div>▼</div></div>					id	name	age	mobile_number
<input type="checkbox"/>	 Edit	 Copy	 Delete	221	Raiyan	23	1913356789	
<input type="checkbox"/>	 Edit	 Copy	 Delete	222	Akash	22	1615556789	
<input type="checkbox"/>	 Edit	 Copy	 Delete	223	Gourab	24	1519956789	

Figure 2: student1 table data.










<div><div>↔T→</div><div>▼</div></div>				id	name	age	mobile_number
<input type="checkbox"/>	 Edit	 Copy	 Delete	221	Raiyan	23	1913356789
<input type="checkbox"/>	 Edit	 Copy	 Delete	222	Akash	22	1615556789
<input type="checkbox"/>	 Edit	 Copy	 Delete	223	Gourab	24	1519956789

Figure 3: student2 table data.










				registration_id	id	name	age	mobile_number	
<input type="checkbox"/>		Edit	 Copy	 Delete	221902113	221	Raiyan	23	1913356789
<input type="checkbox"/>		Edit	 Copy	 Delete	221902114	222	Akash	22	1615556789
<input type="checkbox"/>		Edit	 Copy	 Delete	221902115	223	Gourab	24	1519956789

Figure 4: student3 table data.

6. ANALYSIS AND DISCUSSION

The provided SQL code creates three tables: student1, student2, and student3. Student1 and student2 store student information, and student3 is designed to record student registrations. The tables enforce data integrity using primary keys and unique constraints. Student3 references student2, ensuring that registration records are linked to existing student data. Three sets of INSERT statements add data to the respective tables, linking registration records to students through the foreign key relationship. This structure allows for organized management of student data and their registrations. However, the code should ensure that values are inserted consistently across tables for accurate reference.