Green University of Bangladesh
Department of Computer Science and Engineering(CSE)
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LAB REPORT NO 01
Course Title: Database System lab
Course Code: CSE-210 Section:193DB

Lab Experiment Name: Implementation of Integrity constraints in MySQL(Primary Key, Composite Key, Unique, Foreign Key)

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Lab Report Status
Marks: …… Signature:.....
Comments:..... Date:.....
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TITLE: Implementation of Integrity constraints in MySQL(Primary Key, Composite Key, Unique, Foreign Key)

OBJECTIVE:

Familiar with the establishment of tables and the definition of data integrity in a short time, practice the data integrity functions provided by DBMS, and deepen the understanding of data integrity.

THEORY

PRIMARY KEY: A Primary key is a unique column we set in a table to easily identify and locate data in queries. A table can have only one primary key.

The primary key column has a unique value and doesn't store repeating values. A Primary key can never take NULL values.

```
CREATE TABLE tableName (
   col1 int NOT NULL,
   col2 varchar(50) NOT NULL,
   col3 int,
   PRIMARY KEY (col1)
);
```

COMPOSITE KEY: A key that has more than one attributes is known as composite key. It is also known as compound key.

Any key such as super key, primary key, candidate key etc. can be called composite key if it has more than one attributes.

UNIQUE KEY: is a constraint that is used to uniquely identify a tuple in a table. Multiple unique keys can present in a table. NULL values are allowed in case of a unique key. These can also be used as foreign keys for another table. We have a table name employee which stores data of employees of a company. The below table shows the contents of the table.

Emp_id Name Ph_No. Position Salary

FOREIGN KEY: A FOREIGN KEY in MySQL creates a link between two tables by one specific column of both tables. The specified column in one table must be a PRIMARY KEY and referred by the column of another table known as FOREIGN KEY.

IMPLEMENTATION:

Primary key:

```
CREATE TABLE authority(
name varchar(20),
id int(10),
email varchar(25),
PRIMARY KEY(id)
);
```

Composite key:

```
CREATE TABLE student_id(
   Id int(10),
   name varchar(20),
   address varchar(20),
   Phone_number int(10),
   PRIMARY KEY(Id,Phone_number)
   );
```

Unique key:

```
CREATE TABLE Customer
(
Id INT NOT NULL,
FirstName VARCHAR(100) NOT NULL,
LastName VARCHAR(100),
City VARCHAR(50),
CONSTRAINT UK_CUSTOMER UNIQUE (Id,FirstName)
```

);

Foreign key:

```
CREATE TABLE players(
Player_no int not null,
Name char(15) not null,
Initials char(3) not null,
Birth_date DATE,
Sex char (1) not null,
Joined SMALLINT NOT NULL,
Street varchar(30) not null,
PRIMARY KEY(player_no)

CREATE TABLE teams(
   team_no int NOT NULL,
   player_no int NOT NULL,
   division char(6) NOT NULL,
   PRIMARY KEY(team_no),
   FOREIGN KEY(player_no)
   REFERENCES PLAYERS(player_no)
   );
```

Output:

Primary Key:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	name	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
2	id	int(10)			No	None			Change Drop More
3	emial	varchar(25)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Composite key:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Id	int(10)			No	None			Change Drop More
2	name	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
3	address	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
4	Phone_number	int(10)			No	None			Change Drop More

Unique key:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Id	int(11)			No	None			Change Drop More
2	FirstName	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
3	LastName	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More
4	City	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Foreign key:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	team_no	int(11)			No	None			Change Drop More
2	player_no	int(11)			No	None			Change Drop More
3	division	char(6)	utf8mb4_general_ci		No	None			Change Drop More

DISCUSSION:

1. I have learned about integrity constrains
2. I have learned primary key , foreign key , composite key and unique key.
3. I had some problems creating the foreign key data table. But after a while it was solved