Green University of Bangladesh

Department of Computer Science and Engineering (CSE)

Faculty of Sciences and Engineering

Semester: (Fall,Year:2024),B.Sc.in CSE (Day)

LAB REPORT NO - 01

Course Title: Database System

Course Code: CSE210 Section:222-D3

Lab Experiment Name : Implement Different integrity Constraint

Student Details

	Name	ID
1.	MD.SHAJALAL	223002088

Lab Date : **04 - 09 - 2024**
Submission Date : **11 – 09 – 2024**
Course Teacher's Name : Farhana Akter Sunny

Lab Report Status

Marks: …… **Signature:.....**
Comments:..... **Date:.....**

1. TITLE OF THE LAB REPOT EXPERIMENT

- Implement different integrity Constraint

2. OBJECTIVES

The objective of this lab is to understand and implement various types of integrity constraints in a relational database. These constraints ensure that data entered into the database meets certain criteria, thereby maintaining the accuracy and integrity of the database.

Constraints Covered

- Not Null
- Unique
- Default
- Primory key
- Foreign key
- Composite key
- Check

3.IMPLEMENTATION

➢ Primary key

A PRIMARY KEY uniquely identifies each record in a table. A table can only have one primary key.

```
1 CREATE TABLE Studend (
2                 ID int NOT NULL AUTO_INCREMENT,
3                 Name varchar(20),
4                 CGPA double(10,2) NOT NULL,
5                 Email varchar(30) NOT NULL,
6                 PRIMARY KEY(ID)
7     );
```

```
INSERT INTO studend (ID,Name,CGPA,Email)
VALUES  (223002088,'Md.Shajalal',3.00,'shajalala@gmail.com');
        (223002089,'Md.Sakib',3.00,'sakib099@gmail.com');
```

➢ Unique

The UNIQUE constraint ensures that all values in a column are different.

```
CREATE TABLE  stu (
   S_ID INT NOT NULL,
   S_Name VARCHAR(50) NOT NULL,
   S_Email VARCHAR(100) UNIQUE
);
```

```
INSERT INTO stu (S_ID,S_Name,S_Email)
VALUES  (223002088,'Md.Shajalal','shajalala@gmail.com');
        (223002187,'Samiya','Samiya@gmail.com');
```

➢ Not Null

The NOT NULL constraint ensures that a column cannot have a NULL value.

```
CREATE TABLE Teacher (
   Tea_Name INT NOT NULL,
   Tea_Email VARCHAR(50) NOT NULL,
```

```
    Tea_salary DECIMAL(10, 2)
);
```

```
INSERT INTO teacher (Tea_Name,Tea_Email,Tea_salary)
 VALUES  ( 'Farharna Akter Sunny','farharnaaktersunny@gmail.com',60000);
```

➢ Default

The DEFAULT constraint sets a default value for a column if no value is provided.

```
CREATE TABLE Employees (
    EmpID INT NOT NULL,
    EmpName VARCHAR(50) NOT NULL,
    Salary DECIMAL(10, 2)
);
```

```
INSERT INTO employees(EmpID, EmpName, Salary) VALUES
(457239236,'Md.Sihab','30000')
```

➢ Composite key

A COMPOSITE KEY is a primary key consisting of more than one column.

```
CREATE TABLE ProjectAssignments (
    EmpID INT NOT NULL,
    ProjectID INT NOT NULL,
```

```
    AssignmentDate DATE,
    PRIMARY KEY (EmpID, ProjectID)
);
```

```
INSERT INTO projectassignments(EmpID, ProjectID, AssignmentDate) VALUES (75378,2088,11-09-2024);
```

➢ Check

The CHECK constraint ensures that all values in a column satisfy a specific condition.

```
CREATE TABLE  stud (
    ID INT NOT NULL,
     Name VARCHAR(50) NOT NULL,
    Age INT CHECK (Age >= 18)
);
```

```
INSERT INTO stud(ID, Name, Age) VALUES (223002088 ,'Md.Shajalal',22);
```

Output :

Unique

S_ID	S_Name	S_Email
223002088	Md.Shajalal	shajalala@gmail.com
223002187	Samiya	Samiya@gmaile

PRIMARY KEY

ID	Name	CGPA	Email
223002088	Md.Shajalal	3.00	shajalala@gmail.com
223002089	Md.Sakib	3.00	sakib099@gmail.com

Not Null

Tea_Name	Tea_Email	Tea_salary
0	farharnaaktersunny@gmail.com	60000.00

Default

EmpID	EmpName	Salary
457239236	Md.Sihab	30000.00

Composite key

EmpID	ProjectID	AssignmentDate
75378	2088	0000-00-00

Check

ID	Name	Age
223002088	Md.Shajalal	22
223002088	Md.Shajalal	22