**EXPERIMENT NO: 09**

**Title**: Implementation of integrity constraints like primary key, check, not null and unique.

**Aim:**Implementation of integrity constraints like primary key, check, not null and unique.

**Theory:**

**CONSTRAINTS:**

**Theory:-**

Constraints are used to specify rules for the data in a table. If there is any violation between the constraint and the data action, the action is aborted by the constraint. It can be specified when the table is created (using CREATE TABLE statement) or after the table is created (using ALTER TABLE statement).

1. **NOT NULL:**When a column is defined as NOTNULL, then that column becomes a mandatory column. It implies that a value must be entered into the column if the record is to be accepted for storage in thetable.

Syntax:

**CREATE TABLE** Table\_Name (column\_name data\_type (*size*) **NOT NULL,** );

Example:

**CREATE TABLE** student (sno **NUMBER(3)NOT NULL,** name **CHAR**(**10**));

1. **UNIQUE:**The purpose of a unique key is to ensure that information in the column(s) is unique i.e. a value entered in column(s) defined in the unique constraint must not be repeated across the column(s). A table may have many uniquekeys.

Syntax:

**CREATE TABLE** Table\_Name(column\_name data\_type(*size*) **UNIQUE, ….**);

Example:

**CREATE TABLE** student (sno **NUMBER(3) UNIQUE,** name **CHAR**(**10**));

1. **CHECK:**Specifies a condition that each row in the table must satisfy. To satisfy the constraint, each row in the table must make the condition either TRUE or unknown (due to a null).

Syntax:

**CREATE TABLE** Table\_Name(column\_name data\_type(*size*) **CHECK(*logical xpression*), ….**);

Example:

**CREATE TABLE** student (sno **NUMBER (3),** name **CHAR**(**10**),class **CHAR(5),CHECK**(class**IN**(‘CSE’,’CAD’,’VLSI’));

1. **PRIMARY KEY:**A field which is used to identify a record uniquely. A column or combination of columns can be created as primary key, which can be used as a reference from other tables. A table contains primary key is known as MasterTable.
   * It must uniquely identify each record in atable.
   * It must contain uniquevalues.
   * It cannot be a nullfield.
   * It cannot be multi portfield.
   * It should contain a minimum no. of fields necessary to be calledunique.

Syntax:

**CREATE TABLE** Table\_Name(column\_name data\_type(*size*) **PRIMARY KEY,**

**….**);

Example:

**CREATE TABLE** faculty (fcode **NUMBER(3) PRIMARY KEY,** fname

**CHAR**(**10**));

**Conclusion**: Thus we created table with integrity constraints like primary key, check, not null and unique.

**Sample Questions**

1. What are the primary key and integrity constraint?
2. What are 5 types of constraints?
3. What are the integrity constraints?
4. What is a primary key constraint?
5. What is not null constraint in SQL?
6. How is unique constraint different from primary key constraint?
7. What is the role of unique constraint?
8. What does the NOT NULL integrity constraint?
9. What is the difference between primary key and unique key?

**EXPERIMENT NO: 10**

**Title**: Implementation of referential integrity constraints with foreign key, on delete cascade and ondelete set null.

**Aim:**Implementation of referential integrity constraints with foreign key, on delete cascade and ondelete set null.

**Theory:**

**FOREIGN KEY:**It is a table level constraint. We cannot add this at column level. To reference any primary key column from other table this constraint can be used. The table in which the foreign key is defined is called a **detail table**. The table that defines the primary key and is referenced by the foreign key is called the **mastertable**.

***Syntax:* CREATE TABLE** Table\_Name(column\_name data\_type(*size*)

**FOREIGN KEY**(column\_name) **REFERENCES** table\_name);

Example:

**CREATE TABLE** subject (scode **NUMBER (3) PRIMARY KEY,** subname

**CHAR**(**10**),fcode **NUMBER(3), FOREIGN KEY**(fcode) **REFERENCE** faculty );

Defining integrity constraints in the alter table command:

***Syntax:* ALTER TABLE** Table\_Name **ADD PRIMARY KEY**(column\_name);

***Example:* ALTER TABLE** student **ADD PRIMARY KEY** (sno); (Or)

***Syntax:* ALTER TABLE** table\_name **ADD CONSTRAINT**constraint\_name

**PRIMARY KEY**(colname)

***Example:* ALTER TABLE** student **ADD CONSTRAINT** SN **PRIMARYKEY(**SNO**)**

Dropping integrity constraints in the alter table command:

***Syntax:* ALTER TABLE** Table\_Name **DROP**constraint\_name;

***Example:* ALTER TABLE** student **DROP PRIMARYKEY**;

(or)

***Syntax:* ALTER TABLE** student **DROP CONSTRAINT**constraint\_name**;**

***Example:* ALTER TABLE** student **DROP CONSTRAINT**SN**;**

1. **DEFAULT**: The DEFAULT constraint is used to insert a default value into a column. The default value will be added to all new records, if no other value isspecified.

Syntax:

**CREATE TABLE** Table\_Name(col\_name1,col\_name2,col\_name3 DEFAULT ‘<value>’);

Example:

**CREATE TABLE** student (sno **NUMBER(3) UNIQUE,** name **CHAR**(**10**),address **VARCHAR(20) DEFAULT** ‘Aurangabad’);

**Conclusion**: Thus we Created table with referential integrity constraints with foreign key, on delete cascade and on delete set null.

**Sample Questions:**

1. What is on delete cascade and on delete set null?
2. What does references Column\_name on delete cascade set null mean?
3. What is on delete set null on update cascade?
4. Which are three delete rules for referential integrity constraints?
5. What is on delete cascade?
6. What is delete cascade SQL?
7. What is foreign key with on delete cascade option?