

## EXPERIMENT-9

**AIM:** Write SQL queries to perform KEY CONSTRAINTS (i.e. PRIMARY KEY, FOREIGN KEY, UNIQUE NOT NULL, CHECK, DEFAULT).

### Types of SQL Constraints.

1. NOT NULL - Ensures that a column cannot have a NULL value
2. UNIQUE - Ensures that all values in a column are different
3. PRIMARY KEY - A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
4. FOREIGN KEY - Uniquely identifies a row/record in another table
5. CHECK - Ensures that all values in a column satisfies a specific condition
6. DEFAULT - Sets a default value for a column when no value is specified

### 1.NOT NULL Constraint Example:

```
SQL> CREATE TABLE order2(  
2 id NUMBER PRIMARY KEY,  
3 product_name VARCHAR2(50) NOT NULL,  
4 quantity NUMBER  
5 );
```

Table created.

```
SQL> INSERT INTO order2 VALUES(1,'AGRABATHI',29);
```

1 row created.

```
SQL> INSERT INTO order2 VALUES(4,'',29);  
INSERT INTO order2 VALUES(4,'',29)
```

\*

ERROR at line 1:

ORA-01400: cannot insert NULL into ("C##513"."ORDER2"."PRODUCT\_NAME")

## 2.UNIQUE CONSTRAINT Example:

```
SQL> CREATE TABLE employee1(  
  2  id NUMBER PRIMARY KEY,  
  3  name VARCHAR(50) NOT NULL,  
  4  e_mail VARCHAR2(50) UNIQUE  
  5  );
```

Table created.

```
SQL> INSERT INTO employee1 VALUES(529,'HimaBindu','himabindu567@gmail.com');
```

1 row created.

## 3.PRIMARY KEY CONSTRAINT Example:

```
SQL> CREATE TABLE stud1(  
  2  ID NUMBER PRIMARY KEY,  
  3  first_name VARCHAR(20) NOT NULL,  
  4  last_name VARCHAR(20) NOT NULL  
  5  );
```

Table created.

```
SQL> INSERT INTO stud VALUES(529,'HARRY','POTTER');
```

1 row created.

## 4.FORIEGN KEY CONSTRAINTS Example:

```
SQL> CREATE TABLE orders3(  
2 id NUMBER PRIMARY KEY,  
3 order_num NUMBER NOT NULL,  
4 stud_id NUMBER REFERENCES stud(id)  
5 );
```

Table created.

```
SQL> INSERT INTO orders3 VALUES(11,2,111);  
INSERT INTO orders3 VALUES(11,2,111)  
*  
ERROR at line 1:  
ORA-02291: integrity constraint (C##513.SYS_C008386) violated - parent key n  
ot  
found
```

### 5.CHECK CONSTRAINTS Example:

```
SQL> CREATE TABLE parts2(  
2 part_id NUMBER PRIMARY KEY,  
3 part_name VARCHAR2(50) NOT NULL,  
4 buy_price NUMBER(9,2) CHECK(buy_price>0)  
5 );
```

Table created.

```
SQL> INSERT INTO parts2 VALUES(1,'AGRABATHI',876);
```

1 row created.

```
SQL> INSERT INTO parts2 VALUES(1,'AGRABATHI',-876);  
INSERT INTO parts2 VALUES(1,'AGRABATHI',-876)  
*  
ERROR at line 1:  
ORA-02290: check constraint (C##513.SYS_C008388) violated
```

## 6.DEFAULT CONSTRAINTS Example:

```
SQL> CREATE TABLE customers2(  
  2  name VARCHAR2(50) NOT NULL,  
  3  id NUMBER PRIMARY KEY,  
  4  country VARCHAR2(20) DEFAULT 'IND'  
  5  );
```

Table created.

```
SQL> INSERT INTO customers2 VALUES('ARYA',1,'USA');
```

1 row created.

```
SQL> INSERT INTO customers2(name,id) VALUES('ALLU',2);
```

1 row created.

```
SQL> SELECT * FROM customers2;
```

NAME	ID
ARYA	1
USA	
ALLU	2
IND	