

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:

```
C##547>CREATE TABLE order1(
  2  id NUMBER primary key,
  3  product_name varchar2(50) not null,
  4  quantity number
  5  );

Table created.

C##547>insert into order1 values(1,'agarbathi',30);

1 row created.

C##547>insert into order1 values(4,'',30);
insert into order1 values(4,'',30)
                                *
ERROR at line 1:
ORA-01400: cannot insert NULL into ("C##547"."ORDER1"."PRODUCT_NAME")
```

2. UNIQUE CONSTRAINT Example:

```
1 create table employees (  
2 id number primary key,  
3 name varchar(50) not null,  
4 e_mail varchar2(50) unique  
5* )  
C##547>/  
  
Table created.  
  
C##547>insert into employees values(547,'tauheed','shaikmahammedtauheed@gmail.com');  
  
1 row created.
```

3.PRIMARY KEY CONSTRAINT Example:

```
C##547>create table stud (  
2 id number primary key,  
3 first_name varchar(20) not null,  
4 last_name varchar(20) not null  
5 );  
  
Table created.  
  
C##547>insert into stud values(547,'harry','potter');  
  
1 row created.
```

4.FORIEGN KEY CONSTRAINTS Example:

```
C##547>create table orders(
  2  id number primary key,
  3  order_num number not null,
  4  stud_id number references stud(id)
  5  );

Table created.

C##547>insert into orders values(11,2,111);
insert into orders values(11,2,111)
*
ERROR at line 1:
ORA-02291: integrity constraint (C##547.SYS_C008371) violated - parent key n
ot
found

C##547>insert into orders values(11,2,111)
  2  /
insert into orders values(11,2,111)
*
ERROR at line 1:
ORA-02291: integrity constraint (C##547.SYS_C008371) violated - parent key n
ot
found
```

5.CHECK CONSTRAINTS Example:

```
C##547>create table parts1(
  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.

C##547>insert into parts1 values(1,'agarbathi',897);

1 row created.

C##547>insert into parts1 values(1,'agarbathi',-897)
  2  /
insert into parts1 values(1,'agarbathi',-897)
*
ERROR at line 1:
ORA-02290: check constraint (C##547.SYS_C008373) violated
```

6.DEFAULT CONSTRAINTS Example:

```
C##547>create table customers1 (  
  2  name varchar2(50) not null,  
  3  id number primary key,  
  4  country varchar2(20) default 'ind'  
  5  );
```

Table created.

```
C##547>insert into customers1 values('arjun',1,'aus,');  
ERROR:  
ORA-01756: quoted string not properly terminated
```

```
C##547>insert into customers1 values('arjun',1,'aus');  
  
1 row created.
```

```
C##547>insert into customers1(name,id) values('allu',2);  
  
1 row created.
```

```
C##547>select * from customers1;
```

NAME	ID
arjun	1
aus	
allu	2
ind	