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   I 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-CSE530>CREATE TABLE  order1(
  2  id NUMBER PRIMARY KEY,
  3  product_name VARCHAR2(50) NOT NULL,
  4  quantity NUMBER
  5  );

Table created.

SQL-CSE530>INSERT INTO order1 VALUES(1,'AGARBATHI',30);

1 row created.

SQL-CSE530>INSERT INTO order1 VALUES(4,'',30);
INSERT INTO order1 VALUES(4,'',30)
                                *
ERROR at line 1:
ORA-01400: cannot insert NULL into ("CSE530"."ORDER1"."PRODUCT_NAME")
```

2.UNIQUE CONSTRAINT Example:

```
SQL-CSE530>CREATE TABLE employees (
  2  id NUMBER PRIMARY KEY,
  3  name VARCHAR(50) NOT NULL,
  4  e_mail VARCHAR2(50) UNIQUE
  5  );

Table created.

SQL-CSE530>INSERT INTO employees VALUES(530,'Jagadeesh','jagadeesh8897@gmail.com');

1 row created.
```

3.PRIMARY KEY CONSTRAINT Example:

```
SQL-CSE530>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.
```

```
SQL-CSE530>INSERT INTO stud VALUES(530,'HARRY','POTTER');

1 row created.
```

4.FORIEGN KEY CONSTRAINTS Example:

```
SQL-CSE530>CREATE TABLE orders(
  2  id NUMBER PRIMARY KEY,
  3  order_num NUMBER NOT NULL,
  4  stud_id NUMBER REFERENCES stud(id)
  5  );

Table created.

SQL-CSE530>INSERT INTO orders VALUES(11,2,111);
INSERT INTO orders VALUES(11,2,111)
*
ERROR at line 1:
ORA-02291: integrity constraint (CSE530.SYS_C007076) violated - parent key not
found
```

5.CHECK CONSTRAINTS Example:

```
SQL-CSE530>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.

SQL-CSE530>INSERT INTO parts1 VALUES(1,'AGARBATHI',897);

1 row created.

SQL-CSE530>INSERT INTO parts1 VALUES(1,'AGARBATHI',-897);
INSERT INTO parts1 VALUES(1,'AGARBATHI',-897)
*
ERROR at line 1:
ORA-02290: check constraint (CSE530.SYS_C007083) violated
```

6.DEFAULT CONSTRAINTS Example:

```
SQL-CSE530>CREATE TABLE customers1 (
  2   name VARCHAR2(50) NOT NULL,
  3   id NUMBER PRIMARY KEY,
  4   country VARCHAR2(20) DEFAULT 'IND'
  5   );

Table created.
```

```
SQL-CSE530>INSERT INTO customers1 VALUES('ARJUN',1,'AUS');

1 row created.

SQL-CSE530>INSERT INTO customers1(name,id) VALUES('allu',2);

1 row created.

SQL-CSE530>SELECT * FROM customers1;

NAME                                                        ID
---------------------------------------------------- ----------
COUNTRY
--------------------
ARJUN                                                        1
AUS

allu                                                        2
IND
```