DATABASE MANAGEMENT LAB
PRACTICAL-1

NAME: VEDANT BHUTADA
ROLL: 69
BATCH: A4

Aim:-To implement the relational model and to understand the categorization of SQL statements. To establish an environment (based on a global schema) to execute simple SQL queries demonstrating enforcement of constraints.

```
SQL> show user
USER is "SYSTEM"
SQL> create user vedant identified by 0000;

User created.


SQL> SELECT USERNAME FROM ALL_USERS
  2  WHERE USERNAME='vedant';

no rows selected

SQL> SELECT USERNAME FROM ALL_USERS
  2  WHERE USERNAME='VEDANT';

USERNAME

------------------------------
-
VEDANT


SQL> desc all_users
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
--
 USERNAME                                  NOT NULL VARCHAR2(30)
 USER_ID                                   NOT NULL NUMBER
 CREATED                                   NOT NULL DATE


SQL> select * from all_users
  2  where username='VEDANT';

USERNAME                       USER_ID
CREATED
```

```
------------------------------ ---------- --------
-
VEDANT                                 93 02-SEP-
23

SQL> select * from all_users;

USERNAME                       USER_ID
CREATED
------------------------------ ---------- --------
-
VEDANT                                 93 02-SEP-
23
NIHARIKA                               92 30-AUG-
23
CSB33                                  91 29-AUG-
23
BI                                     90 28-AUG-
23
PM                                     89 28-AUG-
23
SH                                     88 28-AUG-
23
IX                                     87 28-AUG-
23
OE                                     86 28-AUG-
23
HR                                     85 28-AUG-
23
SCOTT                                  84 30-MAR-
10
OWBSYS_AUDIT                           83 30-MAR-
10

USERNAME                       USER_ID
CREATED
------------------------------ ---------- --------
-
OWBSYS                                 79 30-MAR-
10
APEX_030200                            78 30-MAR-
10
APEX_PUBLIC_USER                       76 30-MAR-
10
FLOWS_FILES                            75 30-MAR-
10
MGMT_VIEW                              74 30-MAR-
10
```

```
SYSMAN                                72 30-MAR-
10
SPATIAL_CSW_ADMIN_USR                 70 30-MAR-
10
SPATIAL_WFS_ADMIN_USR                 67 30-MAR-
10
MDDATA                                65 30-MAR-
10
MDSYS                                 57 30-MAR-
10
SI_INFORMTN_SCHEMA                    56 30-MAR-
10

USERNAME                         USER_ID
CREATED
------------------------------ ---------- --------
-
ORDPLUGINS                            55 30-MAR-
10
ORDDATA                               54 30-MAR-
10
ORDSYS                                53 30-MAR-
10
OLAPSYS                               61 30-MAR-
10
ANONYMOUS                             46 30-MAR-
10
XDB                                   45 30-MAR-
10
CTXSYS                                43 30-MAR-
10
EXFSYS                                42 30-MAR-
10
XS$NULL                          2147483638 30-MAR-
10
WMSYS                                 32 30-MAR-
10
APPQOSSYS                             31 30-MAR-
10

USERNAME                         USER_ID
CREATED
------------------------------ ---------- --------
-
DBSNMP                                30 30-MAR-
10
ORACLE_OCM                            21 30-MAR-
10
```

```
DIP                                    14 30-MAR-
10
OUTLN                                   9 30-MAR-
10
SYSTEM                                  5 30-MAR-
10
SYS                                     0 30-MAR-
10

39 rows selected.

SQL> grant connect,resource to VEDANT;

Grant succeeded.

SQL> grant unlimited tablespace to VEDANT;

Grant succeeded.

SQL> grant dba to VEDANT;

Grant succeeded.

SQL> connect vedant/0000
Connected.
SQL> show user
USER is "VEDANT"
//CREATE TABLE
SQL> CREATE TABLE COURSE (
  2  CID NUMBER(3) NOT NULL,
  3  CNAME VARCHAR2(30) NOT NULL,
  4  CREDIT NUMBER(1),
  5  CONSTRAINT COURSE_PK_CID PRIMARY KEY (CID),
  6  CONSTRAINT COURSE_CK_CID CHECK (CID BETWEEN 101 AND 149),
  7  CONSTRAINT COURSE_CK_CREDIT CHECK (CREDIT BETWEEN 1 AND 5),
  8  CONSTRAINT COURSE_UQ_CNAME UNIQUE (CNAME)
  9  );

Table created.

SQL> CREATE TABLE PARTICIPANT (
  2  PID NUMBER(4) NOT NULL,
  3  PNAME VARCHAR2(25) NOT NULL,
  4  GENDER CHAR(1) NOT NULL,
  5  CID NUMBER(3),
  6  CONSTRAINT PARTICIPANT_PK_PID PRIMARY KEY (PID),
  7  CONSTRAINT PARTICIPANT_CK_PID CHECK (PID BETWEEN 1001 AND 9999),
  8  CONSTRAINT PARTICIPANT_CK_GENDER CHECK (GENDER IN ( 'M', 'F' )),
```

```
  9  CONSTRAINT PARTICIPANT_FK_COURSE_CID FOREIGN KEY
 10  (CID) REFERENCES COURSE(CID)
 11
SQL> CREATE TABLE PARTICIPANT (
  2  PID NUMBER(4) NOT NULL,
  3  PNAME VARCHAR2(25) NOT NULL,
  4  GENDER CHAR(1) NOT NULL,
  5  CID NUMBER(3),
  6  CONSTRAINT PARTICIPANT_PK_PID PRIMARY KEY (PID),
  7  CONSTRAINT PARTICIPANT_CK_PID CHECK (PID BETWEEN 1001 AND 9999),
  8  CONSTRAINT PARTICIPANT_CK_GENDER CHECK (GENDER IN ( 'M', 'F' )),
  9  CONSTRAINT PARTICIPANT_FK_COURSE_CID FOREIGN KEY
 10  (CID) REFERENCES COURSE(CID)
 11  );

Table created.
//DESCRIBE TABLE
SQL> DESCRIBE COURSE
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
--
 CID                                       NOT NULL NUMBER(3)
 CNAME                                     NOT NULL VARCHAR2(30)
 CREDIT                                             NUMBER(1)

SQL> DESC PARTICIPANT
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
--
 PID                                       NOT NULL NUMBER(4)
 PNAME                                     NOT NULL VARCHAR2(25)
 GENDER                                    NOT NULL CHAR(1)
 CID                                                NUMBER(3)
// INSERT VALUES IN TABLE
SQL> INSERT INTO COURSE
  2  VALUES(&CID,'&CNAME',&CREDIT);
Enter value for cid: 101
Enter value for cname: DBMS
Enter value for credit: 4
old   2: VALUES(&CID,'&CNAME',&CREDIT)
new   2: VALUES(101,'DBMS',4)

1 row created.

SQL> /
Enter value for cid: 102
Enter value for cname: OOPS
Enter value for credit: 3
```

```
old   2: VALUES(&CID,'&CNAME',&CREDIT)
new   2: VALUES(102,'OOPS',3)

1 row created.

SQL> /
Enter value for cid: 103
Enter value for cname: OS
Enter value for credit: 5
old   2: VALUES(&CID,'&CNAME',&CREDIT)
new   2: VALUES(103,'OS',5)

1 row created.

SQL> /
Enter value for cid: 104
Enter value for cname: CN
Enter value for credit: 2
old   2: VALUES(&CID,'&CNAME',&CREDIT)
new   2: VALUES(104,'CN',2)

1 row created.

SQL> /
Enter value for cid: 105
Enter value for cname: CG
Enter value for credit: 1
old   2: VALUES(&CID,'&CNAME',&CREDIT)
new   2: VALUES(105,'CG',1)

1 row created.

SQL> SELECT * FROM COURSE
  2  ;

       CID
CNAME                              CREDIT
---------- ------------------------------ ---------
-
       101
DBMS                                    4
       102
OOPS                                    3
       103
OS                                      5
       104
CN                                      2
```

```
       105
CG                                     1

SQL> COMMIT;

Commit complete.

SQL> /

Commit complete.

SQL> INSERT INTO PARTICIPANT
  2  VALUES(&PID,'&PNAME','&GENDER',&CID);
Enter value for pid: 7777
Enter value for pname: AKSHAT
Enter value for gender: M
Enter value for cid: 105
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(7777,'AKSHAT','M',105)

1 row created.

SQL> /
Enter value for pid: 6666
Enter value for pname: VEDANT
Enter value for gender: M
Enter value for cid: 106
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(6666,'VEDANT','M',106)
INSERT INTO PARTICIPANT
*
ERROR at line 1:
ORA-02291: integrity constraint (VEDANT.PARTICIPANT_FK_COURSE_CID) violated -
parent key not found


SQL> /
Enter value for pid: 1111
Enter value for pname: VEDANT
Enter value for gender: M
Enter value for cid: 105
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(1111,'VEDANT','M',105)

1 row created.

SQL> /
Enter value for pid: 2222
Enter value for pname: KAPIL
```

```
Enter value for gender: M
Enter value for cid: 103
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(2222,'KAPIL','M',103)

1 row created.

SQL> /
Enter value for pid: 4444
Enter value for pname: VARUN
Enter value for gender: M
Enter value for cid: 102
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(4444,'VARUN','M',102)

1 row created.

SQL> /
Enter value for pid: 3333
Enter value for pname: ADARSH
Enter value for gender: M
Enter value for cid: 101
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(3333,'ADARSH','M',101)

1 row created.

SQL> SELECT * FROM PARTICIPANT;

       PID
PNAME                     G        CID
---------- ------------------------ - ---------
-
      7777
AKSHAT                    M        105
      1111
VEDANT                    M        105
      2222
KAPIL                     M        103
      4444
VARUN                     M        102
      3333
ADARSH                    M        101

SQL> COMMIT
  2  ;

Commit complete.
```

```
SQL> DESC COURSE
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
--
 CID                                       NOT NULL NUMBER(3)
 CNAME                                     NOT NULL VARCHAR2(30)
 CREDIT                                             NUMBER(1)

SQL> INSERT INTO PARTICIPANT
  2  VALUES(&PID,'&PNAME','&GENDER',&CID);
Enter value for pid: 1234
Enter value for pname: ABC
Enter value for gender: F
Enter value for cid: NULL
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(1234,'ABC','F',NULL)

1 row created.

SQL> SELECT * FROM PARTICIPANT;

       PID
PNAME                     G        CID
---------- ------------------------ - ---------
-
      7777
AKSHAT                    M        105
      1111
VEDANT                    M        105
      2222
KAPIL                     M        103
      4444
VARUN                     M        102
      3333
ADARSH                    M        101
      1234
ABC                       F

6 rows selected.

SQL> COMMIT;

Commit complete.

SQL> INSERT INTO PARTICIPANT
  2  VALUES(&PID,'&PNAME','&GENDER',&CID);
Enter value for pid: 7777
```

```
Enter value for pname: DON
Enter value for gender: M
Enter value for cid: 103
old   2: VALUES(&PID,'&PNAME','&GENDER',&CID)
new   2: VALUES(7777,'DON','M',103)
INSERT INTO PARTICIPANT
*
ERROR at line 1:
ORA-00001: unique constraint (VEDANT.PARTICIPANT_PK_PID) violated


//TYPES OF CONSTRAINS

SQL> DESC USER_CONSTRAINTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
--
 OWNER                                              VARCHAR2(30)
 CONSTRAINT_NAME                           NOT NULL VARCHAR2(30)
 CONSTRAINT_TYPE                                    VARCHAR2(1)
 TABLE_NAME                                NOT NULL VARCHAR2(30)
 SEARCH_CONDITION                                   LONG
 R_OWNER                                            VARCHAR2(30)
 R_CONSTRAINT_NAME                                  VARCHAR2(30)
 DELETE_RULE                                        VARCHAR2(9)
 STATUS                                             VARCHAR2(8)
 DEFERRABLE                                         VARCHAR2(14)
 DEFERRED                                           VARCHAR2(9)
 VALIDATED                                          VARCHAR2(13)
 GENERATED                                          VARCHAR2(14)
 BAD                                                VARCHAR2(3)
 RELY                                               VARCHAR2(4)
 LAST_CHANGE                                        DATE
 INDEX_OWNER                                        VARCHAR2(30)
 INDEX_NAME                                         VARCHAR2(30)
 INVALID                                            VARCHAR2(7)
 VIEW_RELATED                                       VARCHAR2(14)

SQL> SELECT CONSTRAINT_NAME,CONSTRAINT_TYPE,TABLE_NAME
  2  FROM USER_CONSTRAINTS
  3  WHERE TABLE_NAME='COURSE';

CONSTRAINT_NAME               C
TABLE_NAME
------------------------------ - ------------------------------
-
SYS_C0011120                  C
COURSE
```

```
SYS_C0011121                   C
COURSE
COURSE_CK_CID                  C
COURSE
COURSE_CK_CREDIT               C
COURSE
COURSE_PK_CID                  P
COURSE
COURSE_UQ_CNAME                U
COURSE

6 rows selected.

SQL> SELECT CONSTRAINT_NAME,CONSTRAINT_TYPE,TABLE_NAME
  2  FROM USER_CONSTRAINTS
  3  WHERE TABLE_NAME='PARTICIPANT';

CONSTRAINT_NAME                C
TABLE_NAME
------------------------------ - ------------------------------
SYS_C0011126                   C
PARTICIPANT
SYS_C0011127                   C
PARTICIPANT
SYS_C0011128                   C
PARTICIPANT
PARTICIPANT_CK_PID             C
PARTICIPANT
PARTICIPANT_CK_GENDER          C
PARTICIPANT
PARTICIPANT_PK_PID             P
PARTICIPANT
PARTICIPANT_FK_COURSE_CID      R
PARTICIPANT

7 rows selected.

SQL> SPOOL OFF
```

CONCLUSION: In this practical, we successfully implemented the relational model and understood the categorization of SQL statements.Also we learnt about constraints.