

ASSIGNMENT-3

Name: Shangirne Kharbanda

Registration Number: 20BAI1154

Slot: L47 + L48

1. Create the following tables with suitable constraints:

a. DEPARTMENT (DEPT_ID, DEPT_NAME). Make DEPT_ID as the primary key and DEPT_NAME should not be null.

b. PROJECT (PROJECT_ID, PROJECT_NAME, DID). Make PROJECT_ID as the primary key and PROJECT_NAME should not be null. DID will be the foreign keys for DEPARTMENT

c. EMPLOYEE(EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE, LOCATION). Make EMP_ID as the primary key. DID and PID will be the foreign keys for DEPARTMENT and PROJECT tables respectively. Only records with age above 21 years can be included in EMPLOYEE table. If the location is not specified put the location as 'CHENNAI'.

Ans 1.

a.

```
SQL> CREATE TABLE DEPARTMENT_20BAI1154(  
  2  DEPT_ID INT,  
  3  DEPT_NAME VARCHAR2(30) NOT NULL,  
  4  PRIMARY KEY(DEPT_ID));
```

Table created.

```
SQL> desc DEPARTMENT_20BAI1154;
```

Name	Null?	Type
DEPT_ID	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	VARCHAR2(30)

```
SQL>
```

b.

```
SQL> CREATE TABLE PROJECT_20BAI1154(  
  2 PROJECT_ID INT PRIMARY KEY,  
  3 PROJECT_NAME VARCHAR2(30) NOT NULL,  
  4 DID INT,  
  5 CONSTRAINT ref_1 FOREIGN KEY (DID) REFERENCES DEPARTMENT_20BAI1154(DEPT_ID));
```

Table created.

```
SQL> desc PROJECT_20BAI1154;
```

Name	Null?	Type
PROJECT_ID	NOT NULL	NUMBER(38)
PROJECT_NAME	NOT NULL	VARCHAR2(30)
DID		NUMBER(38)

```
SQL>
```

c.

```
SQL> CREATE TABLE EMPLOYEE_20BAI1154(  
  2 EMP_ID INT PRIMARY KEY,  
  3 NAME VARCHAR2(30) NOT NULL,  
  4 GENDER VARCHAR2(10) NOT NULL,  
  5 DID INT,  
  6 PID INT,  
  7 DOJ DATE NOT NULL,  
  8 AGE INT CHECK (AGE>21) NOT NULL,  
  9 LOCATION VARCHAR2(30) DEFAULT 'CHENNAI' NOT NULL,  
 10 FOREIGN KEY (DID) REFERENCES DEPARTMENT_20BAI1154(DEPT_ID),  
 11 FOREIGN KEY (PID) REFERENCES PROJECT_20BAI1154(PROJECT_ID));
```

Table created.

```
SQL> desc EMPLOYEE_20BAI1154;
```

Name	Null?	Type
EMP_ID	NOT NULL	NUMBER(38)
NAME	NOT NULL	VARCHAR2(30)
GENDER	NOT NULL	VARCHAR2(10)
DID		NUMBER(38)
PID		NUMBER(38)
DOJ	NOT NULL	DATE
AGE	NOT NULL	NUMBER(38)
LOCATION	NOT NULL	VARCHAR2(30)

```
SQL> select * from EMPLOYEE_20BAI1154;
```

no rows selected

2. Insert 5 departments into DEPARTMENT table.

Ans 2.

```
SQL> INSERT ALL
  2 INTO DEPARTMENT_20BAI1154 VALUES(100, 'CUSTOMS')
  3 INTO DEPARTMENT_20BAI1154 VALUES(101, 'RESERVE')
  4 INTO DEPARTMENT_20BAI1154 VALUES(102, 'INTERCHANGE')
  5 INTO DEPARTMENT_20BAI1154 VALUES(103, 'SHORELINE')
  6 INTO DEPARTMENT_20BAI1154 VALUES(104, 'FACTORY')
  7 SELECT * FROM DUAL;
```

5 rows created.

```
SQL> select * from EMPLOYEE_20BAI1154;
```

no rows selected

```
SQL> select * from DEPARTMENT_20BAI1154;
```

DEPT_ID	DEPT_NAME
100	CUSTOMS
101	RESERVE
102	INTERCHANGE
103	SHORELINE
104	FACTORY

```
SQL>
```

3. Insert 5 projects into PROJECT table.

Ans 3.

```
SQL> INSERT ALL
  2 INTO PROJECT_20BAI1154 VALUES(1, 'M4A1', 100)
  3 INTO PROJECT_20BAI1154 VALUES(2, 'AS-VAL',101)
  4 INTO PROJECT_20BAI1154 VALUES(3, 'RPK-16',102)
  5 INTO PROJECT_20BAI1154 VALUES(4, 'VECTOR' , 103)
  6 INTO PROJECT_20BAI1154 VALUES(5, 'MP7' , 104)
  7 SELECT * FROM DUAL;
```

5 rows created.

```
SQL> select * from PROJECT_20BAI1154;
```

PROJECT_ID	PROJECT_NAME	DID
1	M4A1	100
2	AS-VAL	101
3	RPK-16	102
4	VECTOR	103
5	MP7	104

```
SQL>
```

4. Insert 5 Employees into EMPLOYEE table. Ensure that all the constraint criteria are met.

Ans 4.

```
SQL> INSERT ALL
  2 INTO EMPLOYEE_20BAI1154 (EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE, LOCATION) VALUES(700, 'ADAM', 'MALE', 100, 1, '02-MAR-19', 24, 'TARKOV')
  3 INTO EMPLOYEE_20BAI1154 (EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE, LOCATION) VALUES(701, 'ANGELA', 'FEMALE', 101, 2, '04-APR-20', 23, 'LONDON')
  4 INTO EMPLOYEE_20BAI1154 (EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE, LOCATION) VALUES(702, 'MARK', 'MALE', 102, 3, '05-MAY-18', 22, 'TOKYO')
  5 INTO EMPLOYEE_20BAI1154 (EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE, LOCATION) VALUES(703, 'RACHEL', 'FEMALE', 103, 4, '09-OCT-20', 26, 'CORK')
  6 INTO EMPLOYEE_20BAI1154 (EMP_ID, NAME, GENDER, DID, PID, DOJ, AGE) VALUES(704, 'SHEILA', 'FEMALE', 104, 5, '08-JUN-18', 27)
  7 SELECT * FROM DUAL;
```

5 rows created.

```
SQL> select * from EMPLOYEE_20BAI1154;
```

EMP_ID	NAME	GENDER	DID	PID
700	ADAM	MALE	100	1
701	ANGELA	FEMALE	101	2
702	MARK	MALE	102	3
703	RACHEL	FEMALE	103	4
704	SHEILA	FEMALE	104	5

```
SQL>
```

5. Demonstrate with some queries the various constraint violations pertaining to the tables created above.

Ans 5.

```
SQL> INSERT INTO DEPARTMENT_20BAI1154 VALUES(NULL, 'DANIEL');
INSERT INTO DEPARTMENT_20BAI1154 VALUES(NULL, 'DANIEL')
*
ERROR at line 1:
ORA-01400: cannot insert NULL into
("USERNAME"."DEPARTMENT_20BAI1154"."DEPT_ID")

SQL> INSERT INTO PROJECT_20BAI1154 VALUES(6,'MPX',109);
INSERT INTO PROJECT_20BAI1154 VALUES(6,'MPX',109)
*
ERROR at line 1:
ORA-02291: integrity constraint (USERNAME.REF_1) violated - parent key not
found

SQL> INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',100,4,'07-MAR-19',18,'QUEENS');
INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',100,4,'07-MAR-19',18,'QUEENS')
*
ERROR at line 1:
ORA-02290: check constraint (USERNAME.SYS_C007046) violated

SQL> INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',100,8,'07-MAR-19',18,'QUEENS');
INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',100,8,'07-MAR-19',18,'QUEENS')
*
ERROR at line 1:
ORA-02290: check constraint (USERNAME.SYS_C007046) violated

SQL> INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',178,11,'07-MAR-19',18,'QUEENS');
INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',178,11,'07-MAR-19',18,'QUEENS')
*
ERROR at line 1:
ORA-02290: check constraint (USERNAME.SYS_C007046) violated

SQL> INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',178,11,'07-MAR-19',22,'QUEENS');
INSERT INTO EMPLOYEE_20BAI1154 VALUES(705,'CONRAD','MALE',178,11,'07-MAR-19',22,'QUEENS')
*
ERROR at line 1:
ORA-02291: integrity constraint (USERNAME.SYS_C007049) violated - parent key
not found

SQL>
```


