

| | | |
|------------------|--|---------------------------------|
| Ex.No.: 4 | | WORKING WITH CONSTRAINTS |
| Date: | | |

1. Add a table-level PRIMARY KEY constraint to the EMP table on the ID column. The constraint should be named at creation. Name the constraint my_emp_id_pk.

```
CREATE TABLE EMP ( EmpNo NUMBER(7) PRIMARY KEY,
  Last_name VARCHAR2(25) NOT NULL,First_name VARCHAR2(25));
```

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-----------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| EMP | ID | NUMBER | - | 6 | 0 | 1 | - | - | - |
| | LAST_NAME | VARCHAR2 | 25 | - | - | - | ✓ | - | - |
| | SALARY | NUMBER | - | 8 | 2 | - | ✓ | - | - |

2. Create a PRIMARY KEY constraint to the DEPT table using the ID column. The constraint should be named at creation. Name the constraint my_dept_id_pk.

```
CREATE TABLE DEPT (Dept_id NUMBER(6) NOT NULL,Dept_name
  VARCHAR2(20) NOT NULL,Manager_id NUMBER(6), Location_id
  NUMBER(4),CONSTRAINT my_dept_id_pk PRIMARY KEY (Dept_id));
```

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|-------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| DEPT | DEPT_ID | NUMBER | - | 6 | 0 | 1 | - | - | - |
| | DEPT_NAME | VARCHAR2 | 20 | - | - | - | - | - | - |
| | MANAGER_ID | NUMBER | - | 6 | 0 | - | ✓ | - | - |
| | LOCATION_ID | NUMBER | - | 4 | 0 | - | ✓ | - | - |

3. Add a column DEPT_ID to the EMP table. Add a foreign key reference on the EMP table that ensures that the employee is not assigned to nonexistent department. Name the constraint my_emp_dept_id_fk.

```
ALTER TABLE EMP ADD Dept_id NUMBER(6);
ALTER TABLE EMP ADD CONSTRAINT my_emp_dept_id_fk
FOREIGN KEY(Dept_id) REFERENCES DEPT (Dept_id);
```

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| EMP | EMPNO | NUMBER | - | 7 | 0 | 1 | - | - | - |
| | LAST_NAME | VARCHAR2 | 25 | - | - | - | - | - | - |
| | FIRST_NAME | VARCHAR2 | 25 | - | - | - | ✓ | - | - |
| | DEPT_ID | NUMBER | - | 6 | 0 | - | ✓ | - | - |

4. Modify the EMP table. Add a COMMISSION column of NUMBER data type, precision 2, scale 2. Add a constraint to the commission column that ensures that a commission value is greater than zero.

```
ALTER TABLE EMP
ADD Commission NUMBER(8,2) CONSTRAINT
commission_check CHECK(Commission > 0);
```

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|-------|------------|-----------|--------|-----------|-------|-------------|----------|---------|---------|
| EMP | EMPNO | NUMBER | - | 7 | 0 | 1 | - | - | - |
| | LAST_NAME | VARCHAR2 | 25 | - | - | - | - | - | - |
| | FIRST_NAME | VARCHAR2 | 25 | - | - | - | ✓ | - | - |
| | DEPT_ID | NUMBER | - | 6 | 0 | - | ✓ | - | - |
| | COMMISSION | NUMBER | - | 8 | 2 | - | ✓ | - | - |