Exp.No.1 09.01.2025	DATA DEFINITION LANGUAGE, COMMANDS AND INTEGRITY CONSTRAINTS

AIM

To execute Data Defination Language commands and Integrity Constraints.

CONNECTING SQL

```
SQL> connect
Enter user-name: student
Enter password:
Connected.
```

CREATING TABLE:

```
SQL> CREATE TABLE PERSON(Person_Id numeric(10), Name varchar(20), City varchar(20));
Table created.
```

INSERTING ROW:

```
SQL> INSERT INTO PERSON(Person_Id,Name,City) VALUES (1,'John','US');
1 row created.
SQL> INSERT INTO PERSON(Person_Id,Name,City) VALUES (2,'Robert','USA');
1 row created.
SQL> INSERT INTO PERSON(Person_Id,Name,City) VALUES (3,'Inba','INDIA');
1 row created.
SQL> INSERT INTO PERSON(Person_Id,Name,City) VALUES (4,'Nandy','INDIA');
1 row created.
SQL> INSERT INTO PERSON(Person_Id,Name,City) VALUES (5,'Raju','INDIA');
1 row created.
```

DISPLAYING DETAILS

```
SQL> SELECT * FROM PERSON;
PERSON_ID NAME                 CITY
---------- -------------------- --------------------
         1 John                 US
         2 Robert               USA
         3 Inba                 INDIA
         4 Nandy                INDIA
```

5 Raju INDIA

5 rows selected.

MODIFYING THE STRUCTURE OF TABLES

a) Add new columns

SQL> ALTER TABLE PERSON ADD AGE numeric(3);

Table altered.

DISPLAY

SQL> SELECT * FROM PERSON;

PERSON_ID NAME CITY AGE

---------- -------------------- -------------------- ----------

1 John US

2 Robert USA

3 Inba INDIA

4 Nandy INDIA

5 Raju INDIA

5 rows selected.

b) Dropping a column from a table

SQL> ALTER TABLE PERSON DROP COLUMN Age;

Table altered.

DISPLAY

SQL> SELECT * FROM PERSON;

PERSON_ID NAME CITY

---------- -------------------- --------------------

1 John US

2 Robert USA

3 Inba INDIA

4 Nandy INDIA

5 Raju INDIA

1 John Doe New York

6 rows selected.

MODIFYING EXISITING COLUMNS

SQL> ALTER TABLE PERSON MODIFY(Name VARCHAR(10));

Table altered.

SQL> DESCRIBE People;

Name	Null?	Type
PERSON_ID		NUMBER(10)
NAME		VARCHAR2(10)
CITY		VARCHAR2(20)

RENAMING THE TABLES

SQL> RENAME PERSON to People;

Table renamed.

SQL> SELECT * FROM People;

PERSON_ID	NAME	CITY
1	John	US
2	Robert	USA
3	Inba	INDIA
4	Nandy	INDIA
5	Raju	INDIA

5 rows selected.

TRUNCATING THE TABLES

SQL> TRUNCATE TABLE People;

Table truncated.

DELETING TABLE

SQL> DROP TABLE People;

Table dropped.

CONSTRAINTS

NOT NULL CONSTRAINT

SQL> CREATE TABLE CUSTOMERS(ID INT NOT NULL,NAME VARCHAR(20) NOT NULL,AGE INT NOT NULL,PRIMARY KEY(ID));

Table created.

DEFAULT CONSTRAINT

SQL> CREATE TABLE TEACHER(ID INT NOT NULL,NAME VARCHAR(10) NOT N

ULL,AGE INT NOT NULL,ADDRESS CHAR(12) NOT NULL,SALARY DECIMAL(18

,2) DEFAULT 5000.00,PRIMARY KEY(ID));

Table created.

SQL> INSERT INTO TEACHER VALUES(1,'JOHN',34,'123 Main St',80000

);

1 row created.

SQL> INSERT INTO TEACHER (ID, NAME, AGE, ADDRESS)

VALUES (2, 'MARY', 30, '456 Main St');

1 row created.

SQL> SELECT * FROM TEACHER;

ID	NAME	AGE	ADDRESS	SALARY
1	JOHN	34	123 Main St	80000
2	MARY	30	456 Main St	5000

UNIQUE CONSTRAINT

SQL> CREATE TABLE MEMBERS(ID INT NOT NULL,NAME VARCHAR(10) NOT NULL,PHONE_NO INT NOT NULL UNIQUE,AGE INT NOT NULL,PRIMARY KEY(ID));

Table created.

PRIMARY KEY CONSTRAINT

SQL> CREATE TABLE CUSTOMER1(ID INT NOT NULL,NAME VARCHAR(10) NOT NULL,AGE INT NOT NULL,ADDRESS CHAR(12),SALARY DECIMAL(18,2),PRIMARY KEY(ID));

Table created.

SQL> INSERT INTO CUSTOMER1 VALUES(1,'Manjari',21,'123 Main St',60000);

1 row created.

SQL> INSERT INTO CUSTOMER1 VALUES(2,'John',22,'456 Main St',70000);

1 row created.

SQL> SELECT * FROM CUSTOMER1;

ID	NAME	AGE	ADDRESS	SALARY
1	Manjari	21	123 Main St	60000
2	John	22	456 Main St	70000

CHECK CONSTRAINT

```
SQL> CREATE TABLE MANAGER (
  2     ID INT NOT NULL,
  3     NAME VARCHAR(20) NOT NULL,
  4     AGE INT NOT NULL CHECK (AGE >= 18), -- Correctly define the CHECK constraint
  5     ADDRESS CHAR(12),
  6     SALARY DECIMAL(18, 2),
  7     PRIMARY KEY (ID) );
Table created.
SQL> INSERT INTO MANAGER (ID, NAME, AGE, ADDRESS, SALARY)
        VALUES (1, 'Alice Johnson', 35, 'New York', 85000.00);
1 row created.
SQL> INSERT INTO MANAGER (ID, NAME, AGE, ADDRESS, SALARY)
        VALUES (2, 'Bob Smith', 25, 'Chicago', 65000.00);
1 row created.
SQL> INSERT INTO MANAGER(ID,NAME,AGE,ADDRESS,SALARY) VALUES(3,'B
OB',12,'US',90000);
INSERT INTO MANAGER(ID,NAME,AGE,ADDRESS,SALARY)
VALUES(3,'BOB',12,'US',90000)
*
ERROR at line 1:
ORA-02290: check constraint (SYSTEM.SYS_C008376) violated
Because age must be>=18;
SQL> SELECT *FROM MANAGER;
        ID NAME                 AGE ADDRESS        SALARY
---------- -------------------- ---------- ------------ ----------
         1 Alice Johnson              35 New York         85000
         2 Bob Smith                  25 Chicago          65000
```

DROPPING CONSTRAINT

```
SQL> CREATE TABLE Students (
  2     StudentID INT NOT NULL PRIMARY KEY,
```

```
  3     Name VARCHAR(50) NOT NULL,
  4     Age INT NOT NULL CHECK (Age >= 18),
  5     Major VARCHAR(50),
  6     DepartmentID INT,
  7  CONSTRAINT FK_Department FOREIGN KEY (DepartmentID) REFERENCES
Departments(DepartmentID)
  8  );
Table created.
SQL> ALTER TABLE Students DROP CONSTRAINT FK_Department;
Table altered.
SQL>ALTER TABLE Students DROP PRIMARY KEY;
Table altered.
```

FOREIGN KEY CONSTRAINT:

```
SQL> CREATE TABLE orders (
  2     ID INT NOT NULL,
  3     ORDER_DATE DATE,
  4     CUSTOMER_ID INT NOT NULL,
  5     AMOUNT NUMBER(18, 2),
  6     PRIMARY KEY (ID),
  7     FOREIGN KEY (CUSTOMER_ID) REFERENCES CUSTOMER1(ID)
  8  );
Table created.
SQL> INSERT INTO CUSTOMER1 (ID, NAME, AGE, ADDRESS, SALARY)
  2  VALUES (1, 'John Doe', 30, 'New York', 5000.00);
1 row created.
SQL> INSERT INTO CUSTOMER1 (ID, NAME, AGE, ADDRESS, SALARY)
  2  VALUES (2, 'Jane Smith', 28, 'Los Angeles', 4500.00);
1 row created.
SQL> INSERT INTO orders (ID, ORDER_DATE, CUSTOMER_ID, AMOUNT)
  2  VALUES (101, TO_DATE('2025-01-28', 'YYYY-MM-DD'), 1, 250.00);
1 row created.
SQL> SELECT * FROM  CUSTOMER1;
```

```
        ID NAME               AGE ADDRESS         SALARY
---------- ------------ ---------- ------------ ----------
         1 John Doe             30 New York           5000
         2 Jane Smith           28 Los Angeles        4500
```

SQL> SELECT * FROM orders;

```
        ID ORDER_DAT CUSTOMER_ID     AMOUNT
---------- --------- ----------- ----------
       101 28-JAN-25           1        250
       102 29-JAN-25           2        300
```

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RESULT

Thus Data Defination Language commands and Integrity Constraints were executed.