**Data Definition and Manipulation Languages in RDBMS**

**EX.NO: 1a**

**DATA DEFINITION LANGUAGES (DDL) COMMANDS Of Base Tables and Views**

A Data Definition Language (DDL) statement is used to define the database structure or schema.

**Aim:**

To study and execute the DDL commands in RDBMS.

**DDL Commands:**

1. CREATE
2. ALTER
3. DROP
4. RENAME
5. TRUNCATE

**Syntax of Commands**

**CREATE TABLE:**

To create a new database, table, index, or stored query. A CREATE statement in SQL creates an object within a relational database management system (RDBMS).

CREATE TABLE <table\_name> (

Column\_name1 data\_type ([size]),

Column\_name2 data\_type ([size]),

...

Column\_name-n data\_type ([size])

);

**ALTER TABLE:**

To modify an existing database object. You can alter the structure of the database as follows:

To add a column in a table:

**TABLE table\_name ADD column\_name datatype;**

ALTER TABLE table\_name DROP column column\_name;

**DROP TABLE:**

To delete objects from the database.

DROP TABLE table\_name;

**TRUNCATE TABLE:**

To remove all records from a table, including all spaces allocated for the records.

TRUNCATE TABLE table\_name;

SQL> CREATE TABLE employee (

empid VARCHAR(10) PRIMARY KEY,

empname VARCHAR2(20) NOT NULL,

gender VARCHAR2(7) NOT NULL,

age NUMBER(3) NOT NULL,

dept VARCHAR2(15) NOT NULL,

dob DATE NOT NULL,

doj DATE NOT NULL

);

Table created.

SQL> CREATE TABLE salary (

empid VARCHAR(10) REFERENCES employee(empid),

salary NUMBER(10) NOT NULL,

dept VARCHAR(15) NOT NULL,

branch VARCHAR2(20) NOT NULL

);

Table created.

SQL> CREATE TABLE branchtable (

branch VARCHAR2(20) NOT NULL,

city VARCHAR2(20) NOT NULL

);

Table created.

**Describe Table**

SQL> DESC employee;

Name Null? Type

EMPID NOT NULL VARCHAR2(10)

EMPNAME NOT NULL VARCHAR2(20)

GENDER NOT NULL VARCHAR2(7)

AGE NOT NULL NUMBER(3)

DEPT NOT NULL VARCHAR2(15)

DOB NOT NULL DATE

DOJ NOT NULL DATE

SQL> DESC salary;

Name Null? Type

EMPID NOT NULL VARCHAR2 (10)

SALARY NOT NULL NUMBER (10)

DEPT NOT NULL VARCHAR2 (15)

BRANCH NOT NULL VARCHAR(20)

SQL> DESC branchtable;

Name Null? Type

Branch NOT NULL VARCHAR (20)

City NOT NULL VARCHAR (20)

**ALTER TABLE**

ADD

SQL> ALTER TABLE employee ADD (designation VARCHAR2(15));

Table altered.

SQL> ALTER TABLE salary ADD (CONSTRAINT nithi UNIQUE(empid));

Table altered.

**MODIFY:**

SQL> ALTER TABLE employee MODIFY (designation VARCHAR2(20));

Table altered.

RENAME TABLE:

SQL> CREATE TABLE emp (

empid VARCHAR2(10),

empname VARCHAR2(20),

age NUMBER(3),

sex CHAR

);

Table created.

SQL> RENAME emp TO empl;

Table renamed.

SQL> DESC empl;

Name Null? Type

EMPID VARCHAR2(10)

EMPNAME VARCHAR2(20)

AGE NUMBER(3)

SEX CHAR(1)

SQL> DESC emp;

**TRUNCATE TABLE DATA**

SQL> INSERT INTO emp VALUES (&no,'&name','&dept',&age,'&sex');

Enter value for no: 1

Enter value for name: arun

Enter value for dept: it

Enter value for age: 22

Enter value for sex: m

Output would show the inserted values.

**DROP TABLE**

SQL> DROP TABLE empl;

Table dropped.

SQL> DESC empl;

**EX.NO. 1b**

**DATA MANIPULATION LANGUAGE (DML) OF BASE TABLE AND VIEWS**

Data Manipulation Language allows users to query and manipulate data in existing schema objects. It allows for inserting, deleting, updating, and recovering data in schema objects.

**Aim:**

To study DML commands in RDBMS.

**DML Commands:**

1. INSERT
2. UPDATE
3. DELETE
4. SELECT

**Query:**

A query is a statement in DML that requests the retrieval of data from the database. The portion of DML used in a query is called Query Language. The SELECT statement is used to query a database.

**Syntax of Commands**

**INSERT:**

Values can be inserted into a table using insert commands. There are two types of insert commands:

1. Multiple value insert commands (using ‘&’ symbol).

2. Single value insert command (without using ‘&’ symbol).

INSERT INTO table\_name VALUES (value1, value2, value3, ...);

-- OR --

INSERT INTO table\_name (column1, column2, ...) VALUES (value1, value2, ...);

**UPDATE:**

This allows the user to update specific column values using the WHERE clause condition.

UPDATE <table\_name> SET <col1=value> WHERE <column=value>;

**DELETE:**

This allows you to delete specific column values using the WHERE clause condition.

DELETE FROM <table\_name> WHERE <condition>;

**SELECT:**

The SELECT statement is used to query a database and retrieve information from it. The SELECT statement can be used in various ways:

**1. Selecting Some Columns:**

SELECT column\_name FROM table\_name;

**2. Query All Columns:**

SELECT \* FROM table\_name;

**3. Select Using DISTINCT:**

SELECT DISTINCT column\_name(s) FROM table\_name;

**4. Select Using IN:**

SELECT column\_name(s) FROM table\_name WHERE Column\_name IN (value1, value2,...);

**5. Select Using BETWEEN:**

SELECT column\_name FROM table\_name WHERE Column\_name BETWEEN value1 AND value2;

**6. Renaming Columns/Tables:**

SELECT column\_name AS new\_name FROM table\_name;

Renaming a table:

SELECT column\_name FROM table\_name AS newname;

**7. Sorting Results:**

SELECT column\_name FROM table\_name WHERE Condition ORDER BY column\_name ASC/DESC;

**8. Selecting by Matching Patterns:**

SELECT column\_name FROM table\_name WHERE Column name LIKE “%pattern%”;

**9. SELECT INTO Statement:**

SELECT Column\_name(s) INTO variable\_name(s) FROM table\_name WHERE condition;

**10. Selecting NULL Values:**

SELECT column name FROM table name WHERE Column name IS NULL;

**11. Select Using AND, OR, NOT:**

SELECT column name FROM table name WHERE Condition1 LOGICAL OPERATOR condition2;