

## Database Systems LAB # 06

### Data Manipulation Language (DML) commands in RDBMS

DML commands are the most frequently used SQL commands and is used to query and manipulate the existing database objects. Some of the commands are

- Insert
- Select
- Update
- Delete

#### Insert Command

This is used to add one or more rows to a table. The values are separated by commas and the data types char and date are enclosed in apostrophes. The values must be entered in the same order as they are defined.

##### *Inserting a single row into a table:*

**Syntax:** insert into <table name> values (value list)

**Example:** insert into s values ('s3', 'sup3', 'blore', 10)

##### *Inserting more than one record using a single insert commands:*

**Syntax:** insert into <table name> values (&col1, &col2, ....)

**Example:** Insert into stud values(&reg, '&name', &percentage);

##### *Skipping the fields while inserting:*

Insert into <tablename(coln names to which datas to b inserted)> values (list of values); Other way is to give null while passing the values.

#### Select Commands

It is used to retrieve information from the table. It is generally referred to as querying the table. We can either display all columns in a table or only specify column from the table.

**Syntax:** Select \* from tablename; // This query selects all rows from the table.

**Example;** Select \* from IT;

##### *The retrieval of specific columns from a table:*

It retrieves the specified columns from the table

**Syntax:** Select column\_name1, ....., column\_namen from table name;

**Example:** Select empno, empname from emp;

### ***Elimination of duplicates from the select clause:***

It prevents retrieving the duplicated values. Distinct keyword is to be used.

**Syntax:** Select DISTINCT col1, col2 from table name;

**Example:** *Select DISTINCT job from emp;*

### ***Select command with where clause:***

To select specific rows from a table we include 'where' clause in the select command. It can appear only after the 'from' clause.

**Syntax:** Select column\_name1, .....,column\_namen from table name where condition;

**Example:** *Select empno, empname from emp where sal>4000;*

### ***Select command with order by clause:***

**Syntax:** Select column\_name1, .....,column\_namen from table name where condition order by colmname;

**Example:** *Select empno, empname from emp order by empno;*

### ***Select command to create a table:***

**Syntax:** create table tablename as select \* from existing\_tablename;

**Example:** create table emp1 as select \* from emp;

### ***Select command to insert records:***

**Syntax:** insert into tablename ( select columns from existing\_tablename);

**Example:** insert into emp1 ( select \* from emp);

## **Update Command**

It is used to alter the column values in a table. A single column may be updated or more than one column could be updated.

**Syntax:** update tablename set field=values where condition;

**Example:** *Update emp set sal = 10000 where empno=135;*

## **Delete command**

After inserting row in a table we can also delete them if required. The delete command consists of a from clause followed by an optional where clause.

**Syntax:** Delete from table where conditions;

**Example:** delete from emp where empno=135;

Some special Queries

### **To display the table structure**

*Desc tablename*

### **To clear the screen**

*Cl scr or Clear screen*

### **Change name of Table**

*Rename old\_table name to New table name;*

### **Change name of column**

*Alter table **table\_name** rename column old table\_name to new table\_name;*

### **Column as product/sum of two columns**

*Create table table\_name (column1 data type (length), column2 data type (length) , column3 as (column1\*column2));*

*Create table table\_name (column1 data type (length), column2 data type (length) , column3 as (column1+column2));*

*Alter table table\_name modify column\_name as (column\_name1\*column\_name2);*

*Alter table table\_name modify column\_name as (column\_name1+column\_name2);*

## **Practice Queries**

1. List all Students with names and their department names.
2. List all instructors in CSE department.
3. Find the names of courses in CSE department which have 3 credits.
4. For the student with ID 12345 (or any other value), show all course-id and title of all courses registered for by the student.
5. List all the instructors whose salary is in between 40000 and 90000.
6. Change the advisor id of students with id between 100 and 200 to 1001.
7. Transfer all the instructors of IT department to CSE department.
8. Raise the salary of all the instructors by 5%.
9. Delete the IT department.
10. Waive off perquisite for the course with course id 101.
11. Add a column Date\_of\_birth to student table.
12. Change the size of the dept-name to varChar (20).
13. Drop the column Date\_of\_birth from student table.