DBMS SQL

Lesson 05: Data Manipulation Language



Lesson Objectives

- ➤ To understand the following topics:
 - Concept of Data Manipulation Language
 - Inserting rows into a table
 - Deleting rows from a table
 - Updating rows in a table



Data Manipulation Language



- ➤ Data Manipulation Language (DML) is used to perform the following routines on database information:
 - Retrieve
 - Insert
 - Modify
- DML changes data in an object. If you insert a row into a table, that is DML.
- ➤ All DML statements change data, and must be committed before the change becomes permanent.

5.1 Inserting Rows Into a Table



INSERT

➤ INSERT command:

- INSERT is a DML command. It is used to add rows to a table.
- In the simplest form of the command, the values for different columns in the row to be inserted have to be specified.
- Alternatively, the rows can be generated from some other tables by using a SQL query language command.



Inserting Rows into a Table

➤ Inserting by specifying values:

Example: To insert a new record in the DEPT table

```
INSERT INTO table_name[(col_name1,col_name2,...)]
{VALUES (value1,value2,....) | query};
```

INSERT INTO Department_master
VALUES (10, 'Computer Science');



Inserting Rows into a Table

➤ Inserting rows in a table from another table using Subquery:

Example: The example given below assumes that a new_emp_table exists. You can use a subquery to insert rows from another table.

```
INSERT INTO new_staff_table
SELECT * FROM staff_master
WHERE staff_master.hiredate > '01-jan-82';
```

Inserting Rows into a Table

➤ Inserting by using "substitution variables":

Example: In the example given below, when the command is run, values are prompted every time.

INSERT INTO department_master

VALUES (&dept_code, `&dept_name');

Enter a value for dept_code: 20

Enter a value for dept_name : Electricals

5..2: Deleting Rows from a Table

DELETE

- The DELETE command is used to delete one or more rows from a table.
 - The DELETE command removes all rows identified by the WHERE clause.

```
DELETE [FROM] {table_name | alias }
    [WHERE condition];
```

Deleting Rows from Table



Example 1: If the WHERE clause is omitted, all rows will be deleted from the table.

Example 2: If we want to delete all information about department 10 from the Emp table:

DELETE FROM staff_master;

DELETE FROM student_master WHERE dept_code=10;

UPDATE

- ➤ Use the UPDATE command to change single rows, groups of rows, or all rows in a table.
 - In all data modification statements, you can change the data in only "one table at a time".

```
UPDATE table_name
SET col_name = value|
    col_name =
SELECT_statement_returning_single_value|
    (col_name,...) = SELECT_statement
[WHERE condition];
```





Example 1: To UPDATE the column "dname" of a row, where deptno is 10, give the following command:

UPDATE department_master
SET dept_name= 'Information Technology'
WHERE dept_code=10;



Updating Rows from Table

Example 2: To UPDATE the subject marks details of a particular student, give the following command:



Using a Subquery to do an Update

For making salary of "Anil" equal to that of staff member 100006, use the following command:

```
UPDATE staff_master

SET staff_sal = (SELECT staff_sal FROM staff_master

WHERE staff_code = 100006)

WHERE staff_name = 'Anil';
```

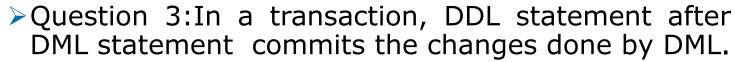
Summary

- ➤ The concept of Data Manipulation Language
- ➤ Inserting rows into a table
- > Deleting rows from a table
- ➤ Updating rows in a table

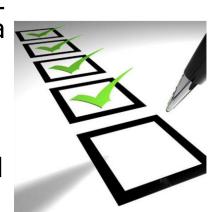


Review - Questions

- ➤ Question 1: Both TRUNCATE statement and DELETE without condition removes the entire date from a table
 - True/False
- Question 2: All DML statements are auto committed
 - True/False



True/False



Review - Questions

- ➤ Question 4: Inserting rows in a table emp1 from another table can be done using ____.
 - Option 1: insert into emp1(t1) as select empno from emp
 - Option 2: insert into emp1(t1) select empno from emp
 - Option 3: insert into emp1(t1) as select * from emp

