

LESSON 3.2

98-364 Database Administration Fundamentals

Inserting Data

Lesson Overview

3.2 Insert data

In this lesson, you will review:

- **INSERT INTO**
- **INSERT INTO** with **SELECT**

INSERT INTO

This statement is used to insert a new row into a table.

It is possible to write the `INSERT INTO` statement in two forms:

- The first form doesn't specify the column name(s) where the data will be inserted; it only specifies the values
- The second form specifies both the column name(s) and the values to be inserted

INSERT INTO (continued)

The First Form:

- Doesn't specify the column name(s) where the data will be inserted; it only specifies the values

```
INSERT INTO table_name
```

```
VALUES (value1, value2, value3, ...)
```

- The number of columns and values must be the same. If a column does not exist, the default value for the column is used to create it.
- The values used by the `INSERT` statement must satisfy all the applicable constraints. If a syntax error occurs or any constraints are violated, the new row is not added to the table and an error is returned

INSERT INTO (continued)

The Second Form:

Specifies both the column names and the values to be inserted

```
INSERT INTO table_name (column1, column2,  
column3, ...)
```

```
VALUES (value1, value2, value3, ...)
```

- **Row value constructors** are used to insert multiple rows at one time in a single SQL statement:

```
INSERT INTO table_name (column1, column2)  
VALUES (value1a, value1b), (value2a, value2b)
```

example of results

<u>column1</u>	<u>column2</u>
value1a	value2a
value1b	value2b

INSERT INTO with SELECT

- **Copying rows from other tables**
- An INSERT statement can also be used to retrieve data from another table, modify it if necessary, and insert it directly into the original table.
- A subselect is used instead of the VALUES clause. The subselect can contain joins, function calls, and it can even query the same table into which the data is inserted.
- The select is evaluated before the actual insert operation is started.

```
INSERT INTO table_name1 (column1, column2)  
SELECT column3, column4  
FROM table_name2
```

- Note that this is the simplest form. The statement can contain **WHERE**, **GROUP BY**, and **HAVING** clauses, as well as table joins and aliases.

INSERT INTO with SELECT (Continued)

```
INSERT INTO Class_Enrollment (Student)  
SELECT id, Name FROM Student_Id
```

- When using the multiple-record syntax, the `INSERT INTO` statement precedes a `SELECT` statement and adds a single or multiple records to a table. This is referred to as an append query, as it copies records from one or more tables to another. The tables that contain the records being appended are not affected by the operation.

INSERT INTO with SELECT (Continued)

```
INSERT INTO Class_Info (Name, Student Id)
SELECT Name, Student Id FROM Student Id
WHERE Enrolled = 'yes'
```

This example demonstrates how to append records to a table from a subquery. All records from `Student_Id` where `enroll` equals “yes” will be added to `Class_Info`.

INSERT INTO with SELECT (Continued)

```
INSERT INTO class_enrollment (Name)
  SELECT student_id.name FROM student_id
 INNER JOIN class_info ON student_id.ID# =
   class_info.ID#
 WHERE class_info.subject= 'Math'
```

- As with a straight-forward SELECT statement, the FROM clause may include more than one table linked by a JOIN operation.
- This example appends to the Class Enrollment table the names of all those Students in Math.

Discussion Questions

- What is the purpose of `INSERT INTO`?
- What happens if a column is not specified using the basic `INSERT` command?
- What command do you use for a subquery with `INSERT`?