Module

6

INSERT, UPDATE, DELETE, LOAD, and UNLOAD

Objectives

At the end of this module, you will be able to:

- Write an INSERT statement to enter data into a table
- Write an UPDATE statement to change data in a table
- Write a DELETE statement to remove data from a table
- Write a LOAD statement to add rows into a database table from a file
- Write an UNLOAD statement to create a file that contains data from a database

Maintaining the Data

- INSERT
- UPDATE
- DELETE
- LOAD
- UNLOAD

The INSERT Statement

```
INSERT INTO stock
    VALUES (120, ’ANZ’, ’roller blades’, 195,
                ’crate’, ’4/crate’);
```

Including a Column List

```
INSERT INTO stock (manu_code, stock_num)
    VALUES ('ANZ', 130);
INSERT INTO stock (manu_code, stock_num)
    VALUES ('NRG', 130)
```

Multiple statements must be separated by a semi-colon (;).

Using NULL and ZERO as Place Holders

SERIAL COLUMN

```
INSERT INTO customer
    VALUES (0, ’John’, ’Doe’, ’My Sports’,
     ’123 Main Street’, NULL, ’Menlo Park’,
     ’CA’, ’94030’, ’415-555-1212’)
```

NULL VALUE

Obtaining Values From a SELECT

```
INSERT INTO closed_orders
  SELECT *
     FROM orders
     WHERE paid_date IS NOT NULL;

INSERT INTO stock2
  SELECT stock_num, manu_code,
           description, unit_price
     FROM stock
     WHERE unit = 'case'
```

The UPDATE Statement

```
UPDATE customer
    SET   company = ’College Sports’,
          phone = ’510-655-0011’
    WHERE customer_num = 118
```

UPDATE Examples

Update one column in ALL rows

```
UPDATE stock
    SET unit_price = unit_price * 1.05
```

Update three columns in selected rows

```
UPDATE orders
    SET (ship_date, ship_weight, ship_charge) =
                            ('3/30/94', 20.40, 10)
        WHERE order_num = 1002
```

UPDATE With a Subquery

```
UPDATE orders
   SET ship_instruct = ’ASAP’
   WHERE order_date > ’6/1/94’
       AND customer_num IN
       (SELECT customer_num
           FROM customer
           WHERE city = ’Redwood City’)
```

The DELETE Statement

```
DELETE FROM customer
    WHERE customer_num = 118
 1 row(s) deleted.
```

```
DELETE FROM customer
    WHERE customer_num = 101
```

```
692: Key value for constraint (informix.u100_1) is still being referenced.
```

Deleting an Unknown Number of Rows

First count how many rows will be deleted.

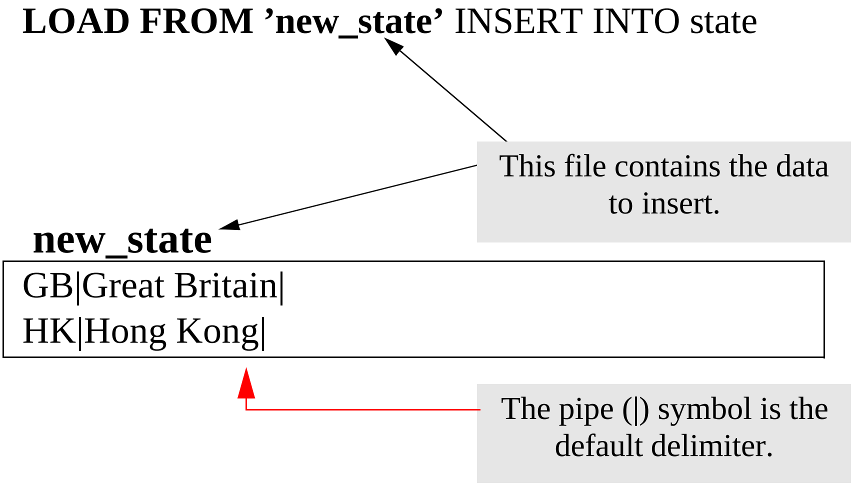
```
SELECT COUNT(*) FROM stock
     WHERE description MATCHES ’tennis*’;

DELETE FROM stock
     WHERE description MATCHES ’tennis*’
```

DELETE Using a Subquery

```
DELETE
    FROM items
    WHERE order_num IN
        (SELECT order_num FROM orders
            WHERE order_date < ’1/1/94’);
DELETE
    FROM orders
    WHERE order_date < ’1/1/94’;
```

The LOAD Statement



LOAD FROM 'new_state' INSERT INTO state

This file contains the data to insert.

new_state

```
GB|Great Britain|
HK|Hong Kong|
```

The pipe (|) symbol is the default delimiter.

Specifying a Delimiter

```
LOAD FROM 'new_state' DELIMITER '!'
     INSERT INTO state
```

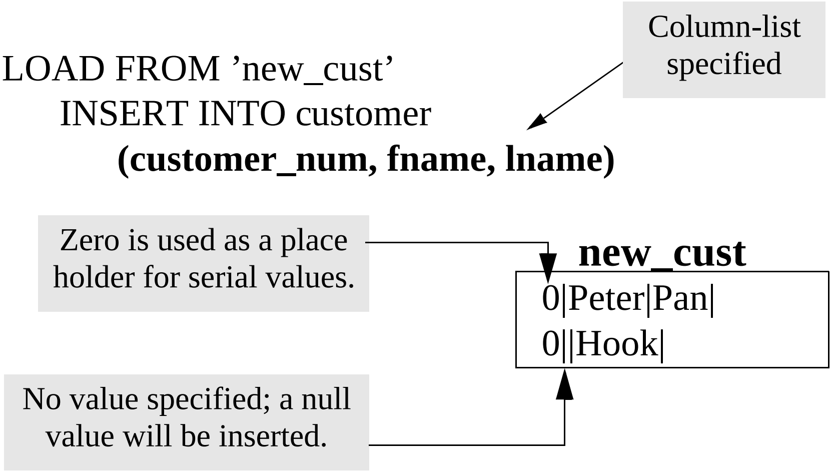
The exclamation point (!) is specified as the delimiter.

new_state

```
GB!Great Britain!
HK!Hong Kong!
```

Specifying Columns

```
LOAD FROM 'new_cust'
     INSERT INTO customer
          (customer_num, fname, lname)
```



Column-list specified

Zero is used as a place holder for serial values.

No value specified; a null value will be inserted.

new_cust

```
0|Peter|Pan|
0||Hook|
```

The UNLOAD Statement

```
UNLOAD TO ’new_cust’
     SELECT * FROM customer
          WHERE customer_num > 120
```

new_cust

```
121|Jason|Wallack|City Sports|Lake Biltmore Mall|350 W. 23rd Street|Wilmington|DE|19898|302-366-7511|
122|Cathy|O'Brian|The Sporting Life|543 Nassau Street||Princeton|NJ|08540|609-342-0054|
...
128|Frank|Lessor|Phoenix University|Athletic Department|1817 N. Thomas Road|Phoenix|AZ|85008|602-533-1817|
```

Specifying a Delimiter

```
UNLOAD TO ’new_cust’ DELIMITER ’;’
    SELECT * FROM customer
        WHERE customer_num > 120
```

new_cust

```
121;Jason;Wallack;City Sports;Lake Biltmore Mall;350 W. 23rd
Street;Wilmington;DE;19898;302-366-7511;
122;Cathy;O'Brian;The Sporting Life;543 Nassau Street;Princeton;NJ;08540;609-342-0054;
...
128;Frank;Lessor;Phoenix University;Athletic Department;1817 N. Thomas
Road;Phoenix;AZ;85008;602-533-1817;
```

Nice to Know
The DBINFO Function

```
INSERT INTO customer (fname, lname)
    VALUES ('Donald', 'Duck');
SELECT UNIQUE DBINFO ('sqlca.sqlerrd1')
    FROM systables WHERE tabid = 1;
```

```
(expression)
     134
```

```
DELETE FROM customer
    WHERE lname in ('Sadler', 'Ream');
SELECT UNIQUE DBINFO ('sqlca.sqlerrd2')
    FROM systables
    WHERE tabid = 1
```

```
(expression)
     1
```

Lab Exercise

Lab Exercise

Complete the following exercises using the demonstration database you created.

1. A new state has been created. It will be called "South Texas" and the abbreviation is "ST"; add this information to the **state** table.

2. Phoenix AZ is part of the new South Texas state. Update the customer table to reflect this.

3. It’s time to delete the calls that have been resolved from the **cust_calls** table.

A. As a precaution, first unload any rows that will be deleted to an ascii file named "old_calls". Examine the contents of the file after unloading.

B. Write the statement that would insert copies of the appropriate rows from the **cust_calls** table into a different table called "calls_arch". To create a temporary table FOR THIS EXERCISE ONLY, run the following:

```
SELECT * FROM cust_calls WHERE 1=2 INTO TEMP calls_arch;
```

C. Delete the rows from the **cust_calls** table.

4. Sam has decided to carry ski goggles manufactured by Smith. He has given you the following information to insert the appropriate row into the **stock** table:

Stock Number:	11
Manufacturer:	SMT
Description:	ski goggles
Unit Price:	$10
Unit:	Not applicable
Unit Description:	Not applicable

5. Sam found out that it is cheaper if he buys the ski goggles by the case. There are 10 goggles in each case, and the case sells for $85. Use this information to change the row you have just added.

6. To compensate for the cost of implementing the state change, you are going to charge all our customers who are living in California an extra 10% delivery charge. Add this to the **ship_charge** for those customers who haven’t paid their bills yet.

7. It turns out that all the reports on customer calls had not been run, and they need the deleted rows moved back into the table.

8. The supplier isn’t going to be able to ship the ski goggles to Sam. Remove them from the **stock** table.

Solutions

Solution

Solution

1.

```
INSERT into state
        VALUES ("ST", "South Texas");
```

2.

```
UPDATE customer
        SET state = "ST"
        WHERE state = "AZ"AND city = "Phoenix";
```

3.

```
        A. UNLOAD TO "old_calls"
                SELECT * FROM cust_calls
                        WHERE res_dtime IS NOT NULL;
        B. INSERT INTO calls_arch
                        SELECT * FROM cust_calls
                                WHERE res_dtime IS NOT NULL;
```

This insert statement is not to be executed unless you created the temporary table.

```
        C. DELETE FROM cust_calls
                        WHERE res_dtime IS NOT NULL;
```

Verify that the rows have been deleted from the table by doing a SELECT on the table.

4.

```
INSERT INTO stock
        (stock_num, manu_code, description, unit_price)
        values (11, ’SMT’, ’ski goggles’, 10);
```

OR

```
INSERT INTO stock
        values (11, ’SMT’, ’ski goggles’, 10, null, null);
```

5.

```
UPDATE stock
        SET (unit_price, unit, unit_descr) =
                (85, ’case’, ’10 goggles/case’)
        WHERE stock_num = 11 AND manu_code = ’SMT’;
```

Because the Primary Key of the stock table is composed of two columns, you must include both those columns in the WHERE clause to insure that you are updating the correct row.

Solution

Solution

6.

```
UPDATE orders
        SET ship_charge = ship_charge * 1.10
                WHERE paid_date IS NULL
                AND customer_num IN
                                (SELECT customer_num FROM customer WHERE state = "CA");
```

7.

```
LOAD FROM "old_calls"
        INSERT INTO cust_calls;
```

8.

```
DELETE FROM stock
        WHERE stock_num = 11 AND manu_code = ’SMT’;
```