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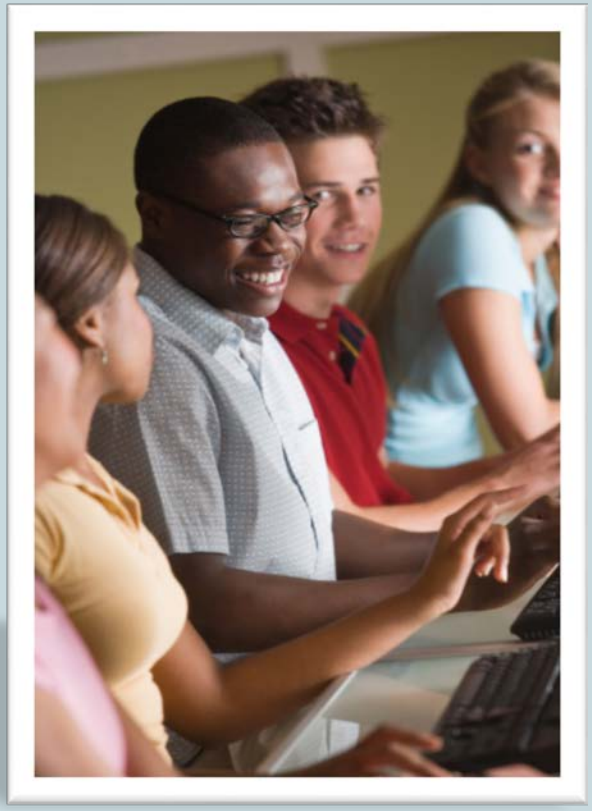
Database Programming with SQL

15-3
Managing Views



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Objectives

This lesson covers the following objectives:

- Create and execute a SQL statement that removes a view
- Create and execute a query using an inline view
- Create and execute a top-n-analysis query

Purpose

- Learning to create and replace views wouldn't be complete unless you also knew how to remove them.
- Views are created for specific purposes.
- When the view is no longer needed or needs to be modified, the means exist to make the necessary changes.
- If an employee who had access to financial information leaves the company, you probably don't want his view to remain accessible.
- In this lesson, you will learn how to delete a view, create an inline view, and construct a SELECT statement to produce a sorted list of data.

Deleting a View

- Because a view contains no data of its own, removing it does not affect the data in the underlying tables.
- If the view was used to INSERT, UPDATE, or DELETE data in the past, those changes to the base tables remain.
- Deleting a view simply removes the view definition from the database.

Deleting a View

- Remember, views are stored as SELECT statements in the data dictionary.
- Only the creator or users with the DROP ANY VIEW privilege can remove a view.
- The SQL syntax to remove a view is:

```
DROP VIEW viewname;
```

Inline Views

- Inline views are also referred to as subqueries in the FROM clause.
- You insert a subquery in the FROM clause just as if the subquery was a table name.
- Inline views are commonly used to simplify complex queries by removing join operations and condensing several queries into one.

Inline Views

- As shown in the example below, the FROM clause contains a SELECT statement that retrieves data much like any SELECT statement.
- The data returned by the subquery is given an alias (d), which is then used in conjunction with the main query to return selected columns from both query sources.

```
SELECT e.last_name, e.salary, e.department_id, d.maxsal
FROM employees e,
       (SELECT department_id, max(salary) maxsal
        FROM employees
        GROUP BY department_id) d
WHERE e.department_id = d.department_id
AND e.salary = d.maxsal;
```

TOP-N-ANALYSIS

- Top-n-analysis is a SQL operation used to rank results.
- The use of top-n-analysis is useful when you want to retrieve the top 5 records, or top-n records, of a result set returned by a query.

```
SELECT ROWNUM AS "Longest employed", last_name, hire_date
FROM employees
WHERE ROWNUM <=5
ORDER BY hire_date;
```

Longest employed	LAST_NAME	HIRE_DATE
1	King	17-Jun-1987
4	Whalen	17-Sep-1987
2	Kochhar	21-Sep-1989
3	De Haan	13-Jan-1993
5	Higgins	07-Jun-1994

TOP-N-ANALYSIS

- The top-n-analysis query uses an inline view (a subquery) to return a result set.
- You can use ROWNUM in your query to assign a row number to the result set.
- The main query then uses ROWNUM to order the data and return the top five.

```
SELECT ROWNUM AS "Longest employed", last_name, hire_date
FROM (SELECT last_name, hire_date
      FROM employees
      ORDER BY hire_date)
WHERE ROWNUM <=5;
```

TOP-N-ANALYSIS

Longest employed	LAST_NAME	HIRE_DATE
1	King	17-Jun-1987
2	Whalen	17-Sep-1987
3	Kochhar	21-Sep-1989
4	Hunold	03-Jan-1990
5	Ernst	21-May-1991

- In the example above, the inline view first selects the list of last_names and hire_dates of the employees:

```
(SELECT last_name, hire_date FROM employees...
```

- Then the inline view orders the years from oldest to newest.

```
...ORDER BY hire_date)
```

TOP-N-ANALYSIS

- The outer query WHERE clause is used to restrict the number of rows returned and must use a < or <= operator.

```
SELECT ROWNUM AS "Longest employed", last_name, hire_date
FROM (SELECT last_name, hire_date
      FROM employees
      ORDER BY hire_date)
WHERE ROWNUM <=5;
```

Longest employed	LAST_NAME	HIRE_DATE
1	King	17-Jun-1987
2	Whalen	17-Sep-1987
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5	Ernst	21-May-1991

Terminology

Key terms used in this lesson included:

- DROP VIEW
- INLINE VIEW
- TOP-N ANALYSIS
- ROWNUM

Summary

In this lesson, you should have learned how to:

- Create and execute a SQL statement that removes a view
- Create and execute a query using an inline view
- Create and execute a top-n-analysis query


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