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Database Programming with SQL

2-1: Working with Columns, Characters, and Rows

Practice Activities

Objectives

* Apply the concatenation operator to link columns to other columns, arithmetic expressions, or constant values to create a character expression
* Use Column Aliases to rename columns in the query result
* Enter literal values of type character, number, or date into a SELECT statement
* Define and use DISTINCT to eliminate duplicate rows
* Display the structure of a table using DESCRIBE or DESC
* Edit, execute, and save SQL statements in Oracle Application Express

Vocabulary

Identify the vocabulary word for each definition below.

|  |  |
| --- | --- |
| DISTINCT | A command that suppresses duplicates |
| Concatenation Operator (Оператор конкатенации) | Links two columns together to form one character data column |
| Literal Values (к примеру, string) | A group of character data |
| DESCRIBE | An SQL plus command that displays the structure of a table |

Try It / Solve It

1. The manager of Global Fast Foods would like to send out coupons for the upcoming sale. He wants to send one coupon to each household. Create the SELECT statement that returns the customer last name and a mailing address.

SELECT last\_name as "Last Name", address || ', ' || city || ', ' || state || '-' || zip ||

CHR(10) || '(Phone-' || phone\_number || ')' as "Mailing Address"

FROM f\_customers;

1. Each statement below has errors. Correct the errors and execute the query in Oracle Application Express.

a.

SELECT first name

FROM f\_staffs;

Исправленное выражение:

SELECT first\_name as "First Name"

FROM f\_staffs;

b.

SELECT first\_name |" " | last\_name AS "DJs on Demand Clients"

FROM d\_clients;

Исправленное выражение:

SELECT first\_name ||' ' || last\_name AS "DJs on Demand Clients"

FROM d\_clients;

c.

SELECT DISCTINCT f\_order\_lines

FROM quantity;

Исправленное выражение:

SELECT DISTINCT quantity

FROM f\_order\_lines;

d.

SELECT order number

FROM f\_orders;

Исправленное выражение:

SELECT order\_number

FROM f\_orders;

1. Sue, Bob, and Monique were the employees of the month. Using the f\_staffs table, create a SELECT statement to display the results as shown in the Super Star chart.

|  |
| --- |
| Super Star |
| \*\*\* Sue \*\*\* Sue \*\*\* |
| \*\*\* Bob \*\*\* Bob \*\*\* |
| \*\*\* Monique \*\*\* Monique \*\*\* |

Ответ:

SELECT '\*\*\*' || first\_name || '\*\*\*' || first\_name || '\*\*\*' as "Super Star"

FROM f\_staffs;

1. Which of the following is TRUE about the following query?

SELECT first\_name, DISTINCT birthdate

FROM f\_staffs;

1. Only two rows will be returned.
2. Four rows will be returned.
3. Only Fred 05-Jan-1988 and Lizzie 10-Nov-1987 will be returned.
4. No rows will be returned.
5. Global Fast Foods has decided to give all staff members a 5% raise. Prepare a report that presents the output as shown in the chart.

|  |  |  |
| --- | --- | --- |
| EMPLOYEE LAST NAME | CURRENT SALARY | SALARY WITH 5% RAISE |
|  |  |  |

Ответ:

SELECT last\_name as "EMPLOYEE LAST NAME", salary as "CURRENT SALARY",

ROUND(salary\*1.05, 2) as "SALARY WITH 5% RAISE"

FROM f\_staffs;

1. Create a query that will return the structure of the Oracle database EMPLOYEES table. Which columns are marked “nullable”? What does this mean?

Запрос:

DESCRIBE employees;

Пояснение:

Столбцы first\_name, phone\_number, salary, commison\_pct, manager\_id, department\_id и bonus имеют тип данных nullable (означает, что некоторые поля таблицы БД могут принимать значение null)

Это означает, что строка действительна, даже если поля, соответствующие этим столбцам, не содержат никаких данных (являются null)

1. The owners of DJs on Demand would like a report of all items in their D\_CDs table with the following column headings: Inventory Item, CD Title, Music Producer, and Year Purchased. Prepare this report.

Ответ:

SELECT cd\_number as "Inventory Item", title as "CD Title", producer as "Music Producer", year as "Year Purchased"

1. True/False -- The following SELECT statement executes successfully:

SELECT last\_name, job\_id, salary AS Sal

FROM employees;

1. True/False -- The following SELECT statement executes successfully:

SELECT \*

FROM job\_grades;

1. There are four coding errors in this statement. Can you identify them?

SELECT employee\_id, last\_name

sal x 12 ANNUAL SALARY

FROM employees;

Исправленное выражение:

SELECT employee\_id, last\_name, salary\*12 "ANNUAL SALARY"

FROM employees;

Исправленные ошибки выделены разными цветами. Первая ошибка (зелёная) – отсутствие запятой, вторая (синяя) – неверно указанная переменна (правильно – salary), третья (фиолетовая) – символ умножения обозначается в SQL с помощью знака “\*”, четвёртая ошибка – отсутствие апострофов у строки ANNUAL SALARY

1. In the arithmetic expression salary\*12 - 400, which operation will be evaluated first?

Ответ:

\* - знак умножения

1. Which of the following can be used in the SELECT statement to return all columns of data in the Global Fast Foods f\_staffs table?
2. column names
3. \*
4. DISTINCT id
5. both a and b
6. Using SQL to choose the columns in a table uses which capability?
7. selection
8. projection
9. partitioning
10. join
11. SELECT last\_name AS "Employee". The column heading in the query result will appear as: a. EMPLOYEE
12. employee
13. Employee
14. "Employee:
15. Which expression below will produce the largest value?
16. SELECT salary\*6 + 100 выведет: 220
17. SELECT salary\* (6 + 100) выведет: 2120
18. SELECT 6(salary+ 100) выведет ошибку!
19. SELECT salary+6\*100 выведет: 602

Зарплата равна 20, верным ответом будет b

1. Which statement below will return a list of employees in the following format?

Mr./Ms. Steven King is an employee of our company.

1. SELECT "Mr./Ms."||first\_name||' '||last\_name 'is an employee of our company.' AS "Employees"

FROM employees;

1. SELECT 'Mr./Ms. 'first\_name,last\_name ||' '||'is an employee of our company.'

FROM employees;

1. SELECT 'Mr./Ms. '||first\_name||' '||last\_name ||' '||'is an employee of our company.' AS "Employees"

FROM employees ;

1. SELECT Mr./Ms. ||first\_name||' '||last\_name ||' '||"is an employee of our company." AS "Employees"

FROM employees

1. Which is true about SQL statements?
2. SQL statements are case-sensitive
3. SQL clauses should not be written on separate lines.
4. Keywords cannot be abbreviated or split across lines.
5. SQL keywords are typically entered in lowercase; all other words in uppercase.
6. Which queries will return three columns each with UPPERCASE column headings?
7. SELECT "Department\_id", "Last\_name", "First\_name"

FROM employees;

1. SELECT DEPARTMENT\_ID, LAST\_NAME, FIRST\_NAME

FROM employees;

1. SELECT department\_id, last\_name, first\_name AS UPPER CASE

FROM employees

1. SELECT department\_id, last\_name, first\_name

FROM employees;

1. Which statement below will likely fail?
2. SELCT \* FROM employees;
3. Select \* FROM employees;
4. SELECT \* FROM EMPLOYEES;
5. SelecT\* FROM employees;
6. Click on the History link at the bottom of the SQL Commands window. Scroll or use the arrows at the bottom of the page to find the statement you wrote to solve problem 3 above. (The one with the column heading SuperStar). Click on the statement to load it back into the command window. Execute the command again, just to make sure it is the correct one that works. Once you know it works, click on the SAVE button in the top right corner of the SQL Commands window, and enter a name for your saved statement. Use your own initials and “\_superstar.sql”, so if your initials are CT then the filename will be CT\_superstar.sql.

Log out of OAE, and log in again immediately. Navigate back to the SQL Commands window, click the Saved SQL link at the bottom of the page and load your saved SQL statement into the Edit window. This is done by clicking on the script name. Edit the statement, to make it display + instead of \*. Run your amended statement and save it as initials\_superplus.sql.