

Group By and Having Clauses

Objectives

- Construct and execute a SQL query applying GROUP BY
- Construct and execute a SQL query applying GROUP BY ... HAVING
- State the purpose of the GROUP BY on more than one column
- Nest group functions

Vocabulary

Directions: Identify the vocabulary word for each definition below.

1. _____ Used to specify which groups are to be displayed; restricts groups that do not meet group criteria
2. _____ Divides the rows in a table into groups

Try It / Solve It

1. In the SQL query shown below, which of the following is True about this query?

- _____ **a.** Kimberly Grant would not appear in the results set.
- _____ **b.** The GROUP BY clause has an error because the manager_id is not listed in the SELECT clause.
- _____ **c.** Only salaries greater than 16001 will be in the result set.
- _____ **d.** Names beginning with Ki will appear after names beginning with Ko.
- _____ **e.** Last names such as King and Kochhar will be returned even if they don't have salaries > 16000.

```
SELECT last_name, MAX(salary)
FROM employees
WHERE last_name LIKE 'K%'
GROUP BY manager_id, last_name
HAVING MAX(salary) > 16000
ORDER BY last_name DESC ;
```

2. Each of the following SQL queries has an error. Find the error and correct it. Use Oracle Application Express to verify that your corrections produce the desired results.

a. SELECT manager_id
FROM employees
WHERE AVG(salary) < 16000
GROUP BY manager_id;

b. SELECT cd_number, COUNT(title)
FROM d_cds
WHERE cd_number < 93;

c. SELECT ID, MAX(ID), artist AS Artist
FROM d_songs
WHERE duration IN('3 min', '6 min', '10 min')
HAVING ID < 50
GROUP by ID;

d. SELECT loc_type, rental_fee AS Fee
FROM d_venues
WHERE id <100
GROUP BY "Fee"
ORDER BY 2;

3. Rewrite the following query to accomplish the same result:

```
SELECT DISTINCT MAX(song_id)
FROM d_track_listings
WHERE track IN ( 1, 2, 3);
```

4. Your teacher needs an alphabetized list of all students' first and last names and the class average for Test 1. She would like the results grouped by gender (male and female), but only show male students whose grade level is 10. Write pseudocode for the SQL statement needed to accomplish the task.

5. Indicate True or False

_____ **a.** If you include a group function and any other individual columns in a SELECT clause, then each individual column must also appear in the GROUP BY clause.

_____ **b.** You can use a column alias in the GROUP BY clause.

_____ **c.** The GROUP BY clause always includes a group function.

6. Write a query that will return both the maximum and minimum average salary grouped by department from the employees table.

7. Write a query that will return the average of the maximum salaries in each department for the employees table.