

Database Programming with SQL

* 1. : Using GROUP BY and HAVING Clauses Practice Activities

# Objectives

* + - Construct and execute a SQL query using GROUP BY
    - Construct and execute a SQL query using GROUP BY … HAVING
    - Construct and execute a GROUP BY on more than one column
    - Nest group functions

# Vocabulary

Identify the vocabulary word for each definition below.

|  |  |
| --- | --- |
| **HAVING** | Used to specify which groups are to be displayed; restricts groups that do not meet group criteria |
| **GROUP BY** | 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. ПРАВДА

b. The GROUP BY clause has an error because the manager\_id is not listed in the SELECT clause. ЛОЖЬ столбец не должен выводиться, чтобы по нему группировать

c. Only salaries greater than 16001 will be in the result set. ЛОЖЬ не обязатель, если входит в группу то будет и меньше

d. Names beginning with Ki will appear after names beginning with Ko. ЛОЖЬ сортировка по фамилии

e. Last names such as King and Kochhar will be returned even if they don’t have salaries > 16000. ЛОЖЬ только если в группе есть больше 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 ;

1. 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.
   1. SELECT manager\_id FROM employees

WHERE AVG(salary) <16000

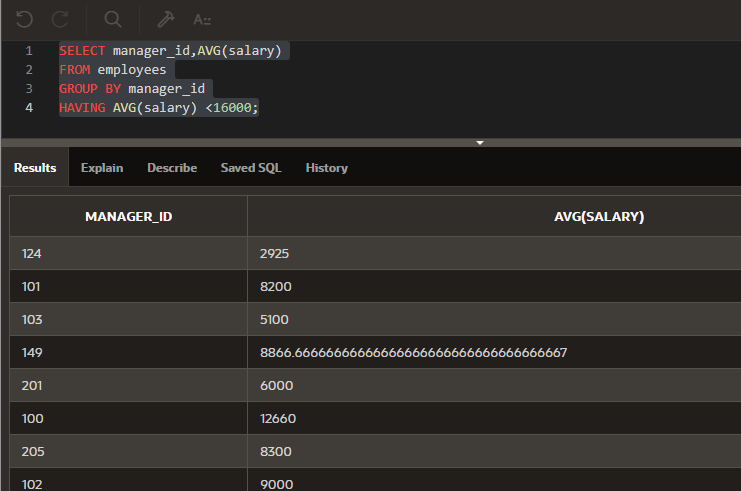
GROUP BY manager\_id;

SELECT manager\_id,AVG(salary)

FROM employees

GROUP BY manager\_id

HAVING AVG(salary) <16000;



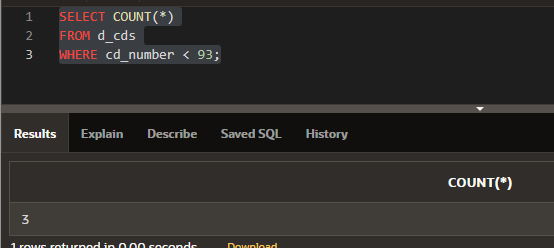
* 1. SELECT cd\_number, COUNT(title) FROM d\_cds

WHERE cd\_number < 93;

SELECT COUNT(\*)

FROM d\_cds

WHERE cd\_number < 93;



* 1. SELECT ID, MAX(ID), artist AS Artist FROM d\_songs

WHERE duration IN('3 min', '6 min', '10 min') HAVING ID < 50

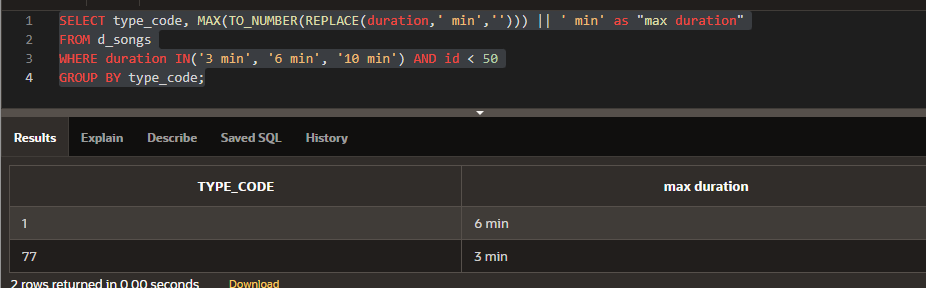
GROUP by ID;

SELECT type\_code, MAX(TO\_NUMBER(REPLACE(duration,' min',''))) || ' min' as "max duration"

FROM d\_songs

WHERE duration IN('3 min', '6 min', '10 min') AND id < 50

GROUP BY type\_code;



* 1. SELECT loc\_type, rental\_fee AS Fee FROM d\_venues

WHERE id <100 GROUP BY "Fee" ORDER BY 2;

SELECT loc\_type, AVG(

CASE

WHEN INSTR(rental\_fee, '/hour') != 0 THEN TO\_NUMBER(REPLACE(rental\_fee,'/hour',''))\*5

WHEN INSTR(rental\_fee, '/flat fee') != 0 THEN TO\_NUMBER(REPLACE(rental\_fee,'/flat fee',''))

WHEN INSTR(rental\_fee, '/per person') != 0 THEN TO\_NUMBER(REPLACE(rental\_fee,'/per person',''))\*10

ELSE 0

END

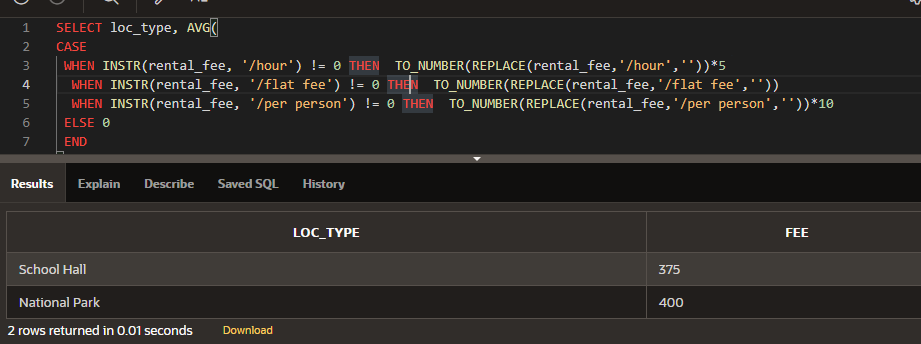
) AS Fee

FROM d\_venues

WHERE id <100

GROUP BY loc\_type

ORDER BY 2;



1. Rewrite the following query to accomplish the same result: SELECT DISTINCT MAX(song\_id)

FROM d\_track\_listings WHERE track IN ( 1, 2, 3);

SELECT track, MAX(song\_id)

FROM d\_track\_listings

WHERE track IN ( 1, 2, 3)

GROUP BY track;



1. 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. ПРАВДА

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

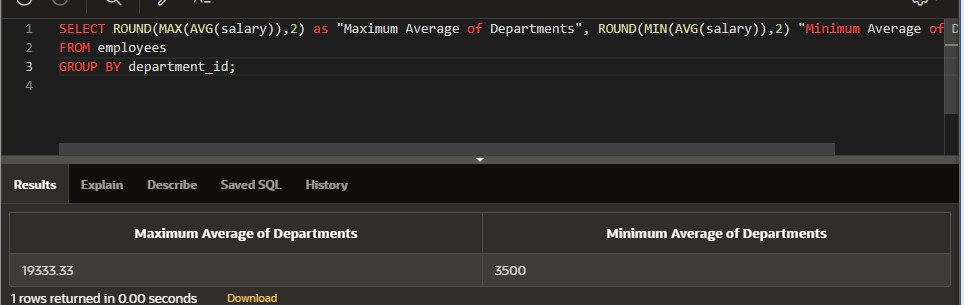
c. The GROUP BY clause always includes a group function. ЛОЖЬ

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

SELECT ROUND(MAX(AVG(salary)),2) as "Maximum Average of Departments", ROUND(MIN(AVG(salary)),2) "Minimum Average of Departments"

FROM employees

GROUP BY department\_id;

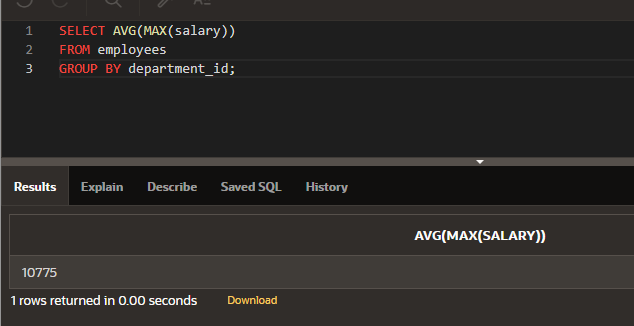


1. Write a query that will return the average of the maximum salaries in each department for the employees table.

SELECT AVG(MAX(salary))

FROM employees

GROUP BY department\_id;



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