

Database Programming with SQL

8-1: Group Functions

Practice Activities

Objectives

- Define and give an example of the seven group functions: SUM, AVG, COUNT, MIN, MAX, STDDEV, VARIANCE
- Construct and execute a SQL query using group functions
- Construct and execute group functions that operate only with numeric data types

Vocabulary

Identify the vocabulary word for each definition below.

	Calculates average value excluding nulls
	Returns the number of rows with non-null values for the expression
	For two sets of data with approximately the same mean, the greater the spread, the greater the standard deviation.
	Operate on sets of rows to give one result per group
	Returns minimum value ignoring nulls
	Used with columns that store numeric data to calculate the spread of data around the mean
	Calculates the sum ignoring null values
	Returns the maximum value ignoring nulls
	To gather into a sum or whole

Try It / Solve It

1. Define and give an example of the seven group functions: AVG, COUNT, MAX, MIN, STDDEV, SUM, and VARIANCE.
2. Create a query that will show the average cost of the DJs on Demand events. Round to two decimal places.
3. Find the average salary for Global Fast Foods staff members whose manager ID is 19.

4. Find the sum of the salaries for Global Fast Foods staff members whose IDs are 12 and 9.
5. Using the Oracle database, select the lowest salary, the most recent hire date, the last name of the person who is at the top of an alphabetical list of employees, and the last name of the person who is at the bottom of an alphabetical list of employees. Select only employees who are in departments 50 or 60.
6. Your new Internet business has had a good year financially. You have had 1,289 orders this year. Your customer order table has a column named total_sales. If you submit the following query, how many rows will be returned?

```
SELECT sum(total_sales)
FROM orders;
```

7. You were asked to create a report of the average salaries for all employees in each division of the company. Some employees in your company are paid hourly instead of by salary. When you ran the report, it seemed as though the averages were not what you expected—they were much higher than you thought! What could have been the cause?
8. Employees of Global Fast Foods have birth dates of July 1, 1980, March 19, 1979, and March 30, 1969. If you select MIN(birthdate), which date will be returned?
9. Create a query that will return the average order total for all Global Fast Foods orders from January 1, 2002, to December 21, 2002.
10. What was the hire date of the last Oracle employee hired?
11. In the following SELECT clause, which value returned by the SELECT statement will be larger?

```
SELECT SUM(operating_cost), AVG(operating_cost)
```

12. Refer to the DJs on Demand database D_EVENTS table:

Which code is valid as part of an SQL query?

- ☐ a. FROM event_date
- ☐ b. SELECT SUM(cost)
- ☐ c. SELECT SUM(event_date)
- ☐ d. SELECT AVG(cost) AS "Expense"
- ☐ e. WHERE MIN(id) = 100
- ☐ f. SELECT MAX(AVG(cost))
- ☐ g. SELECT MIN(event_date)