

Assignment 6 Group Functions (100 points)
Due Date: Monday, February 15th, 11:59 PM

Objectives

The assignment focuses on the use of aggregate functions. These functions combine all the results to perform a statistical operation that returns a single value.

This assignment reinforces the following objectives:

- Write queries with aggregate functions: sum, avg, count, max, and min.
- Use the GROUP BY clause to answer complex managerial questions.
- Use aggregate functions.
- Use the GROUP BY clause with NULL values.
- Use the GROUP BY clause with the WHERE and ORDER BY clauses.
- Use the HAVING clause to filter out rows from a result table.

This assignment uses the tables associated with the retailStore database.

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1. Write a SELECT statement that finds the average salary for Sports Retail Store (SRS) employees whose manager ID is 100.

Sample Run:

```
+-----+
| Average |
+-----+
| 12660.000000 |
```

2. Write a SELECT statement that finds the lowest salary, the most recent hire date, the last name who is first in an alphabetical list of employees, and the last name who is last of an alphabetical list of employees. Select only employees who are in departments 50 or 60.
3. Write a SELECT statement that finds what the most recent hire date of an SRS employee was.
4. Write a SQL statement that creates a list including each employee's first name concatenated to a space and the employee's last name, and the salary of all employees where the last name contains the string 'ar'.

Sample Run:

```
+-----+-----+
| employee name | Salary |
+-----+-----+
| Sophia Barbosa Souza | 9500.00 |
| Michael Hartstein | 13000.00 |
| Neena Kochhar | 17000.00 |
| Matthias Reinhard | 8100.00 |
| Peter Vargas | 2500.00 |
+-----+-----+
```

5. Write a SQL statement that finds the last name who is first in an alphabetical list of employees in the employees table, and the last name who is last in that an alphabetical list.

Sample Run:

```
+-----+-----+
| first last name | last last name |
+-----+-----+
| Abel | Zlotkey |
+-----+-----+
```

6. Write a SQL statement that creates a list of weekly salaries from the employees table where the weekly salary is between \$700 and \$3,000. The salaries should be formatted to include a \$-sign and have two decimal points like: \$9999.99.

Sample Run:

```
+-----+-----+
| employee id | weekly salary |
+-----+-----+
| 100 | $5538 |
| 101 | $3923 |
| 102 | $3923 |
| 103 | $2077 |
| 104 | $1385 |
| 107 | $969 |
| 124 | $1338 |
+-----+-----+
```

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7. Write a SQL statement that lists the item number and item description for all items. The item descriptions should appear in uppercase letters.

Sample Run:

item number	item description
im01101044	CATCHER MITT
im01101045	TOP WORN UNDER THE GAME TOP

8. Write a SQL statement that lists the customer number, first name, last name, and current balance for all customers. The balance should be rounded to the nearest dollar.

Sample Run:

customer number	first name	last name	balance
c00001	Robert	Thornberry	150
c00012	Jennifer	Jones	0
c00101	John	Doe	988

9. SRS is running a promotion that is valid for up to 20 days after an order is placed. Write a SQL statement that lists the order ID, customer number, first name, and last name. The promotion date is 20 days after the order was placed.

Sample Run:

order id	customer number	first name	last name	order date	promotion date
or0101250	c00001	Robert	Thornberry	2017-04-17	2017-05-07
or0101350	c00001	Robert	Thornberry	2017-05-24	2017-06-13
or0101425	c00103	Andrew	Murcia	2017-05-27	2017-06-16

10. Write a SELECT statement that returns these columns:

- The count of the number of orders in the ORDERS table.
- The sum of the number of units column in the ORDERS table.

Sample Run:

num orders	number of unites
10	56

11. Write a SELECT statement that displays the item number and the number of orders placed for each item. Show the results in decreasing order and label result column NumOrders.

Sample Run:

item number	numorders
im01101050	5
im01101048	3
im01101044	2
im01101047	2
im01101046	1

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12. Write a SELECT statement that answers this question: Which customers have ordered more than one item?

Return these columns:

- The email address from the CUSTOMER table
- The count of distinct items from the customer's orders

Sample Run:

email	number of items
bob.thornberry@heatmail.com	3
margal87@delphiview.com	2
spinch2@example.com	2
ssmith5@example.com	2

13. Consider the groups of items where each group contains the items that are from the same category. For each such group that has more than **one item**, display item category, number of items in the group, and average price of the products in the group.

Sample Run:

category	number of items	Average price of the products
clothing	5	29.192000

Submission

- For each of the queries above, submit the query and the result from running the query.
- You will need to label your assignment with your first initial, last name, and the name of the assignment.
Example: *hibrahim_assignment6.sql* and *hibrahim_assignment6.txt*
- Zip the files to upload to Canvas. **Example:** *hibrahim_assignment6.zip*
- Submit the zipped file containing the script and output .txt via Canvas.
- Remember to include the query number as a comment at each step.
- Read your output .txt file before submitting.