Week 3: Grouping Your Expenses for Smarter Spending

Great job last week! Now that you can see your individual expenses, let's get a bigger picture. This week, we'll use grouping and summarizing techniques to understand your spending habits better.

Learning Goals:

Group your expenses: Imagine sorting receipts by category (Groceries, Entertainment, etc.). We'll do this with GROUP BY in SQL. Count and total: Find out how many expenses you have in each category and how much you spent in total for each one. We'll use COUNT and SUM functions. Average it out: Calculate the average expense amount for each category. This will be done with the AVG function. Let's Practice! (2 hours)

What you'll need:

A computer with internet access A text editor (e.g., Notepad, Google Docs) Access to your Expense Tracker database (or instructor-provided data) [We'll be using the "Expenses" table] Import expense_tracker_expenses.sql file into MySQL Workbench and use that to answer the questions below.

Submission:

Save your completed assignment as a document (e.g., .docx, pdf) Submit your document through the designated course platform.

Challenges:

1.1. Total Spent per Category: Write a query to find the total amount you spent in each category (Groceries, Entertainment, etc.). Hint: Use GROUP BY category and SUM(amount).

Answer:

MariaDB [expense_tracker]> SELECT category, SUM(amount) AS total_spent

-> FROM expenses

-> GROUP BY category;

```
MariaDB [expense_tracker]> SELECT category, SUM(amount) AS total_spent
    -> FROM expenses
    -> GROUP BY category;
+----------------+-------------+
| category       | total_spent |
+----------------+-------------+
| Bills          |       75.40 |
| Clothing       |       15.99 |
| Dining Out     |       30.00 |
| Entertainment  |       57.50 |
| Groceries      |       55.75 |
| Other          |       22.00 |
| Transportation |        5.00 |
| Travel         |      350.00 |
+----------------+-------------+
8 rows in set (0.018 sec)

MariaDB [expense_tracker]>
```

1.2. Average Expense per Category: Now, let's see the average cost for each category. Write a query to find the average expense amount for each category. Hint: Use GROUP BY category and AVG(amount).

Answer:

MariaDB [expense_tracker]> SELECT category, AVG(amount) AS average_expense

-> FROM expenses

-> GROUP BY category;

```
MariaDB [expense_tracker]> SELECT category, AVG(amount) AS average_expense
    -> FROM expenses
    -> GROUP BY category;
+----------------+-----------------+
| category       | average_expense |
+----------------+-----------------+
| Bills          |       75.400000 |
| Clothing       |       15.990000 |
| Dining Out     |       30.000000 |
| Entertainment  |       28.750000 |
| Groceries      |       27.875000 |
| Other          |       22.000000 |
| Transportation |        5.000000 |
| Travel         |      350.000000 |
+----------------+-----------------+
8 rows in set (0.015 sec)

MariaDB [expense_tracker]>
```

Bonus Challenge (Optional):

Are you curious about your top spending categories? Modify your query from Challenge 1 to show only the top 3 (or a chosen number) categories where you spend the most.

Answer:

MariaDB [expense_tracker]> SELECT category, SUM(amount) AS total_spent

   -> FROM expenses

   -> GROUP BY category

   -> ORDER BY total_spent DESC

   -> LIMIT 3;

```
MariaDB [expense_tracker]> SELECT category, SUM(amount) AS total_spent
    -> FROM expenses
    -> GROUP BY category
    -> ORDER BY total_spent DESC
    -> LIMIT 3;
+---------------+-------------+
| category      | total_spent |
+---------------+-------------+
| Travel        |      350.00 |
| Bills         |       75.40 |
| Entertainment |       57.50 |
+---------------+-------------+
3 rows in set (0.002 sec)

MariaDB [expense_tracker]>
```

Remember:

There might be different ways to solve these challenges. Experiment and see what works best for you! Don't hesitate to ask the database team for help if you get stuck.

By completing these exercises, you'll be well on your way to becoming a database Administrator or Data Analyst pro for your own finances!