### **Grouping and Summarizing Expenses in SQL**

This week, we'll focus on grouping your expenses to get a better understanding of your spending habits. We'll use SQL's GROUP BY, SUM, and AVG functions to achieve this. Below are the challenges and solutions to help you practice.

#### **Challenges**

##### **1.1. Total Spent per Category**

**Goal:** Write a query to find the total amount spent in each category.

**Hint:** Use GROUP BY category and SUM(amount).

**Solution:**

sql

Copy code

SELECT category, SUM(amount) AS total\_spent

FROM Expenses

GROUP BY category;

This query groups the expenses by category and calculates the total amount spent in each category using the SUM function.

##### **1.2. Average Expense per Category**

**Goal:** Write a query to find the average expense amount for each category.

**Hint:** Use GROUP BY category and AVG(amount).

**Solution:**

sql

Copy code

SELECT category, AVG(amount) AS average\_expense

FROM Expenses

GROUP BY category;

This query groups the expenses by category and calculates the average expense amount in each category using the AVG function.

### **Detailed Steps**

1. **Import the expense\_tracker\_expenses.sql file into MySQL Workbench:**
   * Open MySQL Workbench.
   * Go to File > Open SQL Script and select the expense\_tracker\_expenses.sql file.
   * Execute the script to create and populate the Expenses table.
2. **Run the Queries:**
   * Open a new SQL tab in MySQL Workbench.
   * Copy and paste the provided queries into the SQL editor.
   * Execute the queries to see the results.

### **Example Data and Results**

Suppose you have the following data in the Expenses table:

| **expense\_id** | **category** | **amount** | **date** |
| --- | --- | --- | --- |
| 1 | Groceries | 150 | 2024-07-01 |
| 2 | Entertainment | 200 | 2024-07-02 |
| 3 | Groceries | 100 | 2024-07-03 |
| 4 | Bills | 250 | 2024-07-04 |
| 5 | Entertainment | 150 | 2024-07-05 |

**Results for Total Spent per Category:**

sql

Copy code

SELECT category, SUM(amount) AS total\_spent

FROM Expenses

GROUP BY category;

| **category** | **total\_spent** |
| --- | --- |
| Bills | 250 |
| Entertainment | 350 |
| Groceries | 250 |

**Results for Average Expense per Category:**

sql

Copy code

SELECT category, AVG(amount) AS average\_expense

FROM Expenses

GROUP BY category;

| **category** | **average\_expense** |
| --- | --- |
| Bills | 250 |
| Entertainment | 175 |
| Groceries | 125 |