WEEK 2 ASSIGNMENT

**Part 1: Retrieving Data with SELECT**

**1.1 Retrieving All Expenses: To retrieve all data points from the “Expenses” table, you can use the following query:**

SELECT \*

FROM Expenses;

**1.2 Specific Columns: If you want to select specific columns relevant to your analysis (such as “date,” “category,” and “amount”), modify the query like this:**

SELECT date, category, amount

FROM Expenses;

**1.3 Filtering by Date Range: To retrieve expenses charged between a specific date range (e.g., January 1, 2021, to December 15, 2024), use the appropriate data type for the “date” column:**

SELECT \*

FROM Expenses

WHERE date BETWEEN '2021-01-01' AND '2024-12-15';

**Part 2: Filtering with WHERE Clause**

**2.1 Filtering by Category: Find all expenses belonging to a specific category (e.g., “Entertainment”):**

SELECT \*

FROM Expenses

WHERE category = 'Entertainment';

**2.2 Filtering with Comparison Operators: Retrieve expenses with an amount greater than a certain value (e.g., $50):**

SELECT \*

FROM Expenses

WHERE amount > 50;

**2.3 Combining Filters (AND): Refine your query to find expenses greater than $75 AND belonging to the “Food” category:**

SELECT \*

FROM Expenses

WHERE amount > 75 AND category = 'Food';

**2.4 Combining Filters (OR): Modify your query to find expenses belonging to one category or another (e.g., “Transportation” OR “Groceries”):**

SELECT \*

FROM Expenses

WHERE category = 'Transportation' OR category = 'Groceries';

**2.5 Filtering with NOT: Display expenses unrelated to a specific category (e.g., “Rent”):**

SELECT \*

FROM Expenses

WHERE category <> 'Rent';

**Part 3: Sorting Retrieved Data**

**3.1 Sorting by Amount: Display all expenses sorted by amount in descending order (highest to lowest spending):**

SELECT \*

FROM Expenses

ORDER BY amount DESC;

**3.2 Sorting by Date and Category: Sort expenses first by date (descending order) and then by category (ascending order):**

SELECT \*

FROM Expenses

ORDER BY date DESC, category ASC;

**Part 4: Database Upgrade**

**4.1 Create the “Income” table:**

CREATE TABLE Income (

income\_id INT PRIMARY KEY AUTO\_INCREMENT,

amount DECIMAL(10,2) NOT NULL,

date DATE NOT NULL,

source VARCHAR(50) NOT NULL

);

**4.2 Add a new column “category” to track income sources:**

ALTER TABLE Income

ADD category VARCHAR(50);

**4.3 Remove the “source” column:**

ALTER TABLE Income

DROP COLUMN source;

**Finally, if you decide to remove the “Income” table entirely**:

DROP TABLE Income;