**DATABASE ASSIGNMENT**

**Part 1: Retrieving Data with SELECT**

**1.1 Retrieving All Expenses:**

SELECT \*

FROM Expenses;

**1.2 Specific Columns:**

SELECT date, category, amount

FROM Expenses;

**1.3 Filtering by Date Range: To retrieve expenses within a specific date range (e.g., January 1, 2021, to December 15, 2024):**

SELECT \*

FROM Expenses

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

**Part 2: Filtering with WHERE Clause**

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

SELECT \*

FROM Expenses

WHERE category = 'Entertainment';

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

SELECT \*

FROM Expenses

WHERE amount > 50;

**2.3 Combining Filters (AND): 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): To find expenses belonging to “Transportation” OR “Groceries”:**

SELECT \*

FROM Expenses

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

**2.5 Filtering with NOT: To 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: To display expenses sorted by amount (highest to lowest):**

SELECT \*

FROM Expenses

ORDER BY amount DESC;

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

SELECT \*

FROM Expenses

ORDER BY date DESC, category ASC;

**Part 4: Database Upgrade**

**4.1 Creating the “Income” Table**:

CREATE TABLE Income (

income\_id INT AUTO\_INCREMENT PRIMARY KEY,

amount DECIMAL(10,2) NOT NULL,

date DATE NOT NULL,

source VARCHAR(50) NOT NULL

);

**4.2 Adding the “category” Column to “Income”:**

ALTER TABLE Income

ADD category VARCHAR(50);

**4.3 Removing the “source” Column from “Income”:**

ALTER TABLE Income

DROP COLUMN source;

**To permanently remove the “Income” table, use:**

DROP TABLE Income;