STUDENT: KELVIN NJUGUNA (VIN)

EMAIL: njugunak349@gmail.com

Week 2 Database assignment

Part 1: Retrieving Data with SELECT

1.1 Retrieving All Expenses:

BELOW IS THE CODE
```
SELECT * FROM Expenses;
```

This query retrieves all columns and rows from the "Expenses" table.

1.2 Specific Columns:

BELOW IS THE CODE
```
SELECT date, category, amount FROM Expenses;
```

This query selects only the "date," "category," and "amount" columns from the "Expenses" table.

1.3 Filtering by Date Range:

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE date BETWEEN '2021-01-01' AND '2024-12-15';
```

This query retrieves all expenses that were charged between January 1, 2021, and December 15, 2024.

Part 2: Filtering with WHERE Clause

2.1 Filtering by Category:

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE category = 'Entertainment';
```

This query retrieves all expenses that belong to the "Entertain category.

2.2 Filtering with Comparison Operators:

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE amount > 50;
```

This query retrieves all expenses where the amount is greater than $50.

2.3 Combining Filters (AND):

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE amount > 75 AND category = 'Food';
```

This query retrieves all expenses where the amount is greater than $75 and the category is "Food."

2.4 Combining Filters (OR):

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE category = 'Transportation' OR category = 'Groceries';
```

This query retrieves all expenses that belong to either the "Transportation" or "Groceries" category.

2.5 Filtering with NOT:

BELOW IS THE CODE
```
SELECT * FROM Expenses
WHERE category <> 'Rent';
```

This query retrieves all expenses that do not belong to the "Rent" category.

Part 3: Sorting Retrieved Data

3.1 Sorting by Amount:

BELOW IS THE CODE
```
SELECT * FROM Expenses
ORDER BY amount DESC;
```

This query retrieves all expenses sorted by amount in descending order.

3.2 Sorting by Date and Category:

BELOW IS THE CODE
```sql
SELECT * FROM Expenses
ORDER BY date DESC, category ASC;
```

This query retrieves all expenses sorted first by date in descending order, and then by category in ascending order.

Part 4: Database Upgrade

4.1 Creating the "Income" table:

BELOW IS THE CODE
```sql
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
);
```

This command creates a new table named "Income" with the specified columns.

4.2 Adding a new column named "category":

BELOW IS THE CODE
```sql
ALTER TABLE Income
ADD COLUMN category VARCHAR(50);
```

This command adds a new column named "category" to the "Income" table.

4.3 Removing the "source" column:

BELOW IS THE CODE
```sql
ALTER TABLE Income
DROP COLUMN source;
```

This command removes the "source" column from the "Income" table.

4.4 Dropping the "Income" table:

BELOW IS THE CODE
```sql
DROP TABLE Income;
```

This command permanently removes the "Income" table from the database.