1.1 Retrieving All Expenses

To retrieve all data points from the Expenses table:

SELECT * FROM Expenses;

1.2 Specific Columns

To select specific columns such as date, category, and amount:

SELECT date, category, amount FROM Expenses;

1.3 Filtering by Date Range

To retrieve expenses charged between January 1, 2021, and December 15, 2024:

SELECT * FROM Expenses
WHERE date BETWEEN '2021-01-01' AND '2024-12-15';

Part 2: Filtering with WHERE Clause (45 minutes)

2.1 Filtering by Category

To find all expenses belonging to the category "Entertainment":

SELECT * FROM Expenses
WHERE category = 'Entertainment';

2.2 Filtering with Comparison Operators

To find expenses with an amount greater than $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 either "Transportation" OR "Groceries":

SELECT * FROM Expenses
WHERE category = 'Transportation' OR category = 'Groceries';

2.5 Filtering with NOT

To display expenses unrelated to the "Rent" category:

SELECT * FROM Expenses
WHERE category != 'Rent';

Part 3: Sorting Retrieved Data (45 minutes)

3.1 Sorting by Amount

To display all expenses sorted by amount in descending order:

SELECT * FROM Expenses
ORDER BY amount DESC;

3.2 Sorting by Date and Category

To sort expenses first by date in descending order and then by category in ascending order:

SELECT * FROM Expenses
ORDER BY date DESC, category ASC;

Part 4: Database Upgrade

4.1 Creating the Income Table

To create a table named Income:

```
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 Adding a New Column category

To add a new column named category to the Income table:

```
ALTER TABLE Income
ADD COLUMN category VARCHAR(50);
```

4.3 Removing the source Column

To remove the source column from the Income table:

```
ALTER TABLE Income
DROP COLUMN source;
```

4.4 Dropping the Income Table

To permanently remove the Income table from the database:

```
DROP TABLE Income;
```