Week 2 DATABASE ASSIGNMENT

**1. Retrieving Data with SELECT**

* Use `SELECT \* FROM Expenses;` to retrieve all columns.
* For specific columns: `SELECT date, category, amount FROM Expenses;`
* For date range filtering: `SELECT \* FROM Expenses WHERE date BETWEEN '2021-01-01' AND '2024-12-15';`

**2. Filtering with WHERE Clause**

* Category filter: `SELECT \* FROM Expenses WHERE category = 'Entertainment';`
* Amount filter: `SELECT \* FROM Expenses WHERE amount > 50;`
* Combining filters:
* `SELECT \* FROM Expenses WHERE amount > 75 AND category = 'Food';`
* `SELECT \* FROM Expenses WHERE category = 'Transportation' OR category = 'Groceries';`
* NOT filter: `SELECT \* FROM Expenses WHERE category != 'Rent';`

**3. Sorting Retrieved Data**

* Sort by amount: `SELECT \* FROM Expenses ORDER BY amount DESC;`
* Multiple column sort: `SELECT \* FROM Expenses ORDER BY date DESC, category ASC;`

**4. Database Upgrade**

- Creating the Income table:

```sql

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

);

```

* + Adding a column: `ALTER TABLE Income ADD COLUMN category VARCHAR(50);`
  + Removing a column: `ALTER TABLE Income DROP COLUMN source;`
  + Dropping the table: `DROP TABLE Income;`