

# In-Class SQL Challenge: Bank Transaction Analysis

## Scenario: Banking Audit Emergency

The bank's compliance department needs immediate transaction reports for a regulatory audit starting in 20 minutes. Generate these queries now!

### Database Tables:

```
-- accounts table:  
-- account_id, account_holder, account_type, balance,  
opening_date, branch_code, status  
  
-- transactions table:  
-- transaction_id, account_id, transaction_date, amount,  
transaction_type, description  
  
-- branches table:  
-- branch_code, branch_name, city, manager_name,  
employee_count  
All tables contain banking data.
```

### Your Tasks:

#### Part A: Text and Conditional Operations

**Task A1:** Display account information showing:

- Account holder name in uppercase
- First 5 characters of branch\_code
- Account type with status appended (e.g., "Savings - Active")

**Task A2:** Classify accounts by balance:

- 'High Value' if balance > 100000
- 'Medium Value' if balance between 10000 and 100000
- 'Low Value' otherwise

**Task A3:** Find all accounts where account\_holder contains the letter 'a' (case insensitive).

#### Part B: Numerical Operations and Filtering

**Task B1:** Find all transactions where amount is between 500 and 5000 AND transaction\_type equals 'Withdrawal'.

**Task B2:** Calculate balance after applying 2.5% annual interest for all savings accounts.

**Task B3:** Find branches where employee\_count is greater than 10 OR city is 'New York'.

**Task B4:** Show transactions where description is NULL or empty.

## **Part C: Aggregation**

**Task C1:** Calculate the total transaction amount for each account\_id.

**Task C2:** Count how many accounts exist in each branch. Show only branches with more than 5 accounts.

**Task C3:** Find the average balance for each account\_type.

**Task C4:** Get the sum of all transaction amounts where transaction\_type is 'Deposit', grouped by transaction\_date.

## **Part D: Subqueries**

**Task D1:** Find all accounts that have at least one transaction. Use EXISTS.

**Task D2:** Find accounts whose balance is greater than ANY account at branch 'BR001'.