

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'.