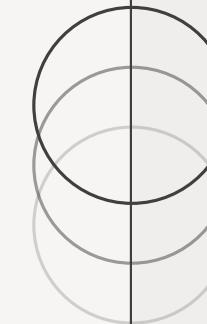


AKTAN DAIROV



# BANK ACCOUNTING SYSTEM

DATABASE PROJECT

ESENALIEVA GULZAT

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MAY 2030

# Project Overview

## PURPOSE

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Create a relational database for banking operations

## FEATURES IMPLEMENTED

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CUSTOMER MANAGEMENT  
ACCOUNT MANAGEMENT  
DEPOSITS/WITHDRAWALS /TRANSFERS  
TRANSACTION HISTORY  
VIEW, TRIGGERS, PROCEDURES  
DATA INTEGRITY & CONSTRAINTS

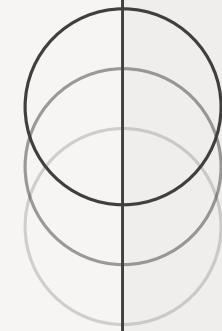
# Problem Statement

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## BANKING SYSTEMS REQUIRE

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- RELIABLE STORAGE OF CUSTOMER AND ACCOUNT DATA
  - ACCURATE TRACKING OF FINANCIAL TRANSACTIONS
  - PREVENTION OF INVALID OPERATIONS (E.G., NEGATIVE BALANCE)
  - SECURE AND AUDITABLE HISTORY OF ALL ACTIONS
-



# System Requirements

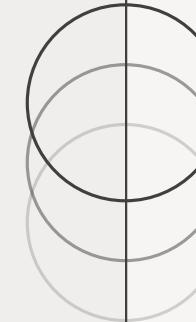
## FUNCTIONAL REQUIREMENTS

- CREATE CUSTOMER
- CREATE BANK ACCOUNT
- PERFORM DEPOSIT
- PERFORM WITHDRAWAL (WITH BALANCE CHECK)
- TRANSFER FUNDS BETWEEN ACCOUNTS
- SHOW TRANSACTION HISTORY

## NON-FUNCTIONAL

- DATA INTEGRITY
- CONSISTENCY
- TRANSACTION SAFETY
- SECURE PERMISSIONS

# Database Architecture



## MAIN ENTITIES

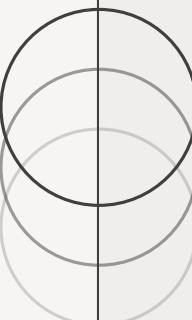
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- CUSTOMERS
- ACCOUNTS
- TRANSACTIONS

## RELATIONSHIPS

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- 1 CUSTOMER → MANY ACCOUNTS
- 1 ACCOUNT → MANY TRANSACTIONS



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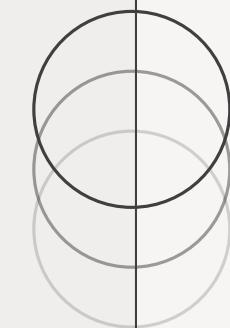
# Performance Overview

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## PAID ADVERTISING

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# Database Schema

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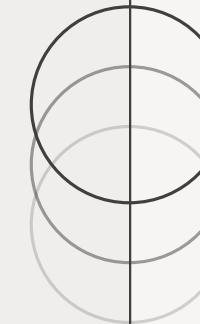
## TABLES CREATED

- CUSTOMERS
  - ACCOUNTS
  - TRANSACTIONS
- 

## MENTION PURPOSE OF EACH TABLE:

- CUSTOMERS → PERSONAL INFO
  - ACCOUNTS → FINANCIAL STATE
  - TRANSACTIONS → EVERY OPERATION STORED FOREVER
-

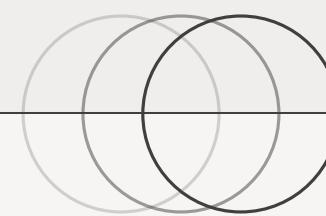
# SQL File Structure



01\_CREATE\_DATABASE.SQL  
02\_TABLES.SQL  
03\_CONSTRAINTS.SQL  
04\_INSERT\_SAMPLE\_DATA.SQL  
05\_STORED PROCEDURES.SQL  
06\_TRIGGERES.SQL  
07\_VIEWS.SQL  
08\_EXAMPLE\_QUERIES.SQL  
09\_PERMISSIONS.SQL

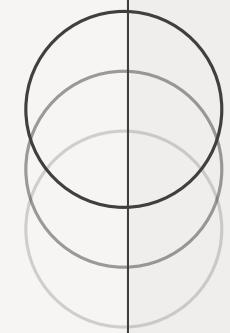
# Constraints Implemented

- UNIQUE(PASSPORT\_ID)
- CHECK(BALANCE >= 0)
- FOREIGN KEY(CUSTOMER\_ID → CUSTOMERS)
- FOREIGN KEY(ACCOUNT\_ID → ACCOUNTS)



## Why needed?

- PREVENT DUPLICATES
- PREVENT INVALID DATA
- ENSURE REFERENTIAL INTEGRITY



# THANK YOU

## Q&A