



NAME: Charls Emil C. Barquin SUBJECT: Information Management 1

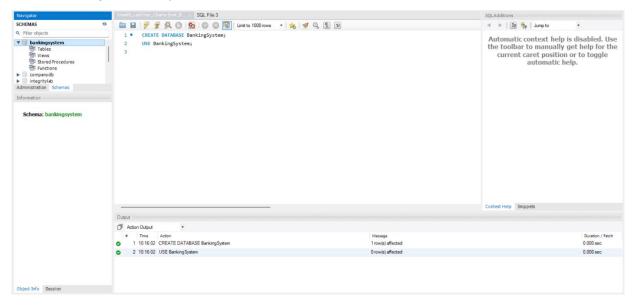
COURSE, YEAR & SECTION: BSIS-2A PROFESSOR: Mr. Red Guillermo V. Jr.

Week 7 Laboratory Guide: Database Transactions and Security

Laboratory Title: Implementing Transactions and Security in MySQL

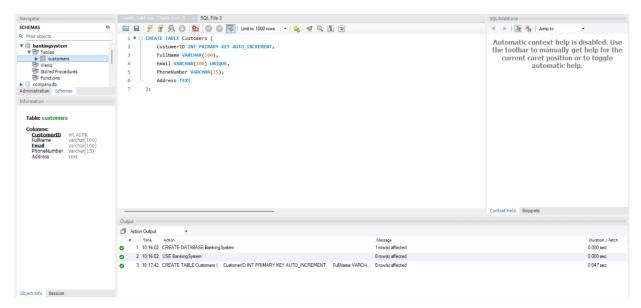
Preliminary Setup

Step 1: Setting Up the MySQL Environment



Title: Creating the BankingSystem Database

Description: This query creates the BankingSystem database and sets it as the active database to store tables and records related to customers, accounts, transactions, loans, and payments.



Title: Creating the Customers Table

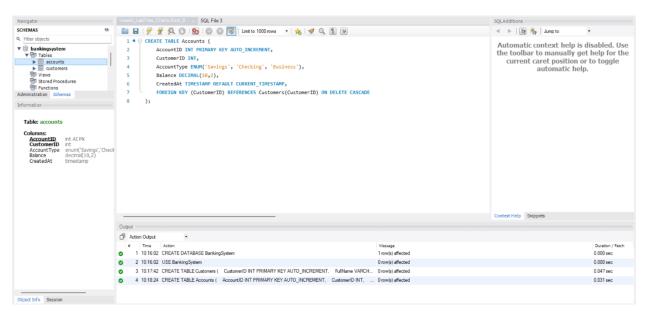
Description: The Customers table stores the personal details of bank clients, ensuring each entry has a unique CustomerID with an auto-increment feature. The Email field has a unique constraint to prevent duplicate entries.





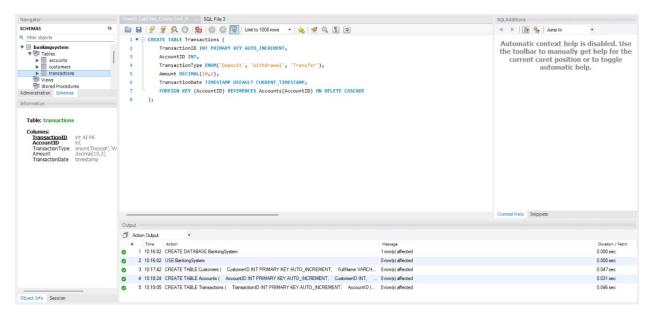
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Title: Setting Up the Accounts Table

Description: This table records bank accounts linked to customers. It allows different account types (Savings, Checking, Business), tracks balances, and automatically timestamps the account creation date.



Title: Recording Bank Transactions

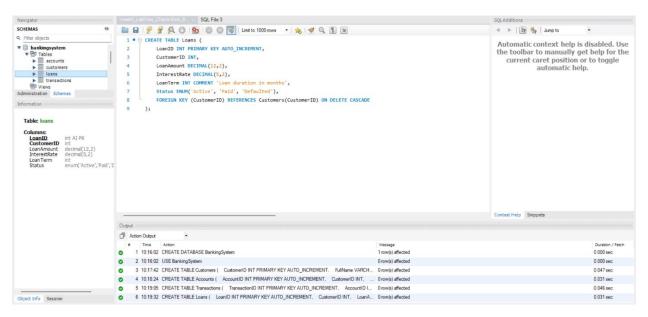
Description: This table logs all financial transactions (Deposits, Withdrawals, Transfers) associated with an account. The TransactionDate field is automatically set to the current timestamp when a transaction occurs.





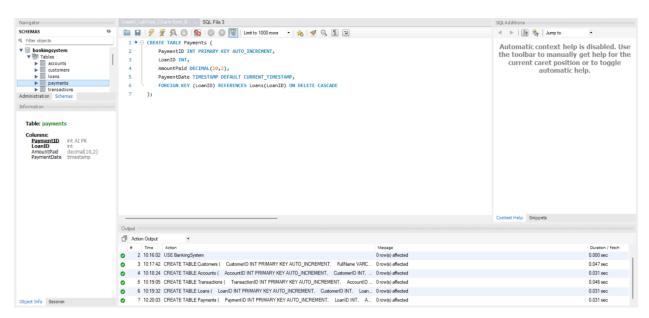
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Title: Managing Loan Information

Description: This table tracks loan details, including the borrowed amount, interest rate, loan term (in months), and status (Active, Paid, or Defaulted). It links each loan to a specific customer.



Title: Tracking Loan Payments

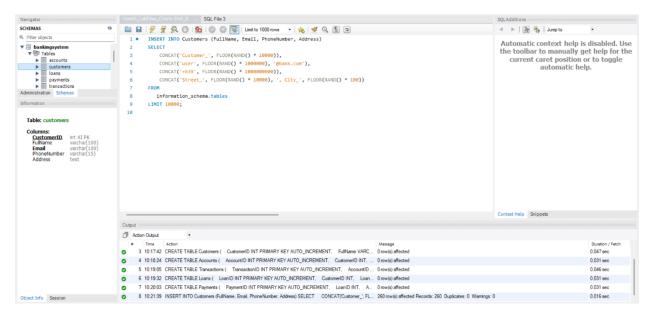
Description: The Payments table records payments made toward loans, linking each payment to a specific loan and automatically capturing the payment date.





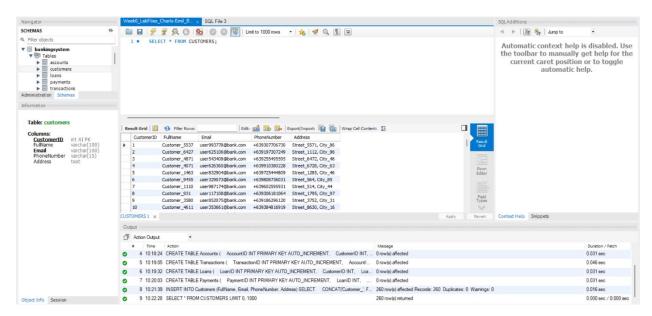
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Title: Adding Sample Customer Data

Description: This query inserts 10,000 randomly generated customer records, including fake names, emails, phone numbers, and addresses, for testing purposes.



Title: Retrieving Customer Records

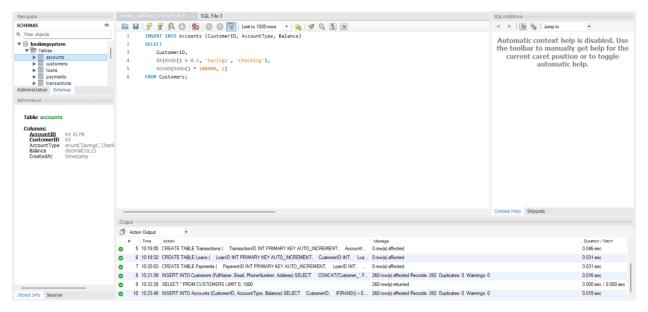
Description: This query displays all records on the Customers table, allowing verification of stored data.





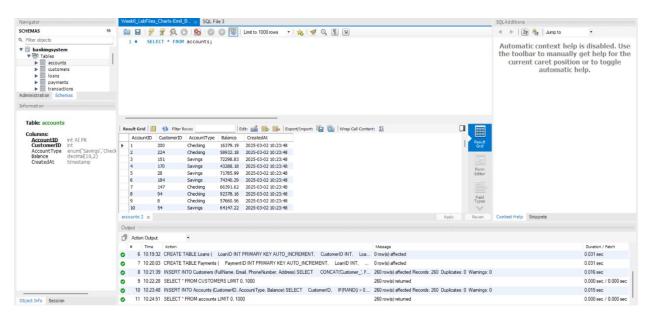
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Title: Assigning Bank Accounts to Customers

Description: Each customer is assigned either a Savings or Checking account, with randomly generated initial balances.



Title: Retrieving All Bank Accounts

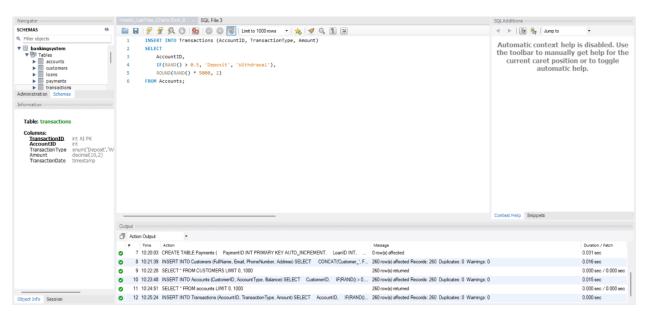
Description: This query fetches all records from the Accounts table, displaying details such as account type, balance, and the customer associated with each account. It helps verify that accounts were successfully created and linked to customers.





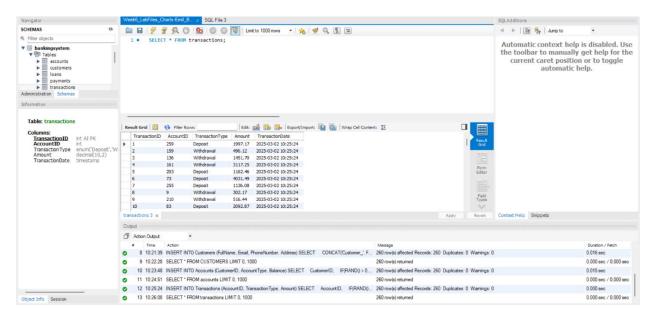
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Title: Simulating Deposits and Withdrawals

Description: This query inserts random transactions for each account, ensuring a mix of deposits and withdrawals with varying amounts.



Title: Reviewing Transaction Records

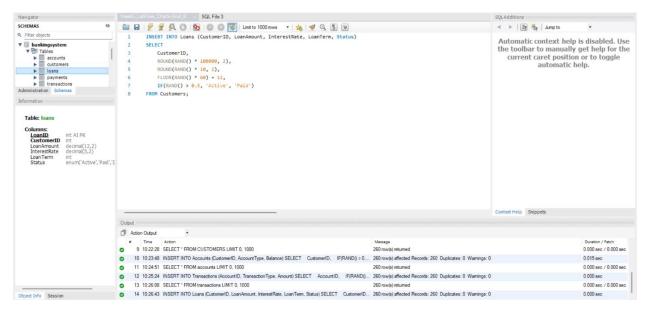
Description: This query retrieves all financial transactions, including deposits and withdrawals, along with their amounts and timestamps. It provides insights into customer banking activity and transaction history.





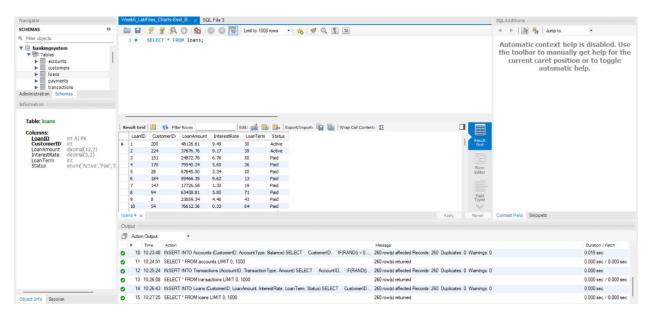
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Title: Generating Loan Records

Description: Assigns random loans to customers with varying amounts, interest rates, loan terms, and statuses.



Title: Checking Loan Details

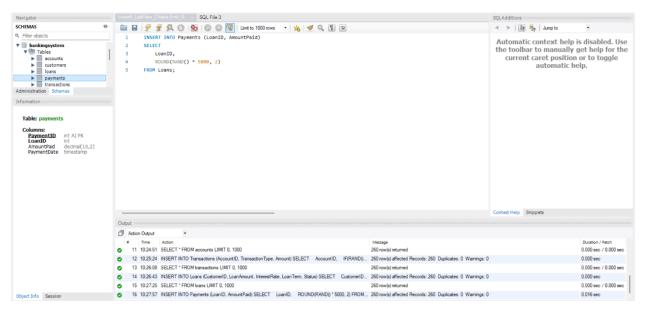
Description: This query displays all loan records, including loan amounts, interest rates, terms, and statuses. It is useful for reviewing active and paid loans assigned to different customers.





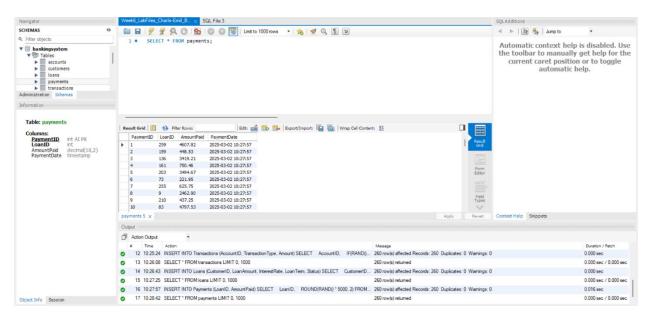
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Title: Recording Loan Repayments

Description: This query inserts random payment amounts for active loans, simulating customer repayments.



Title: Verifying Loan Payments

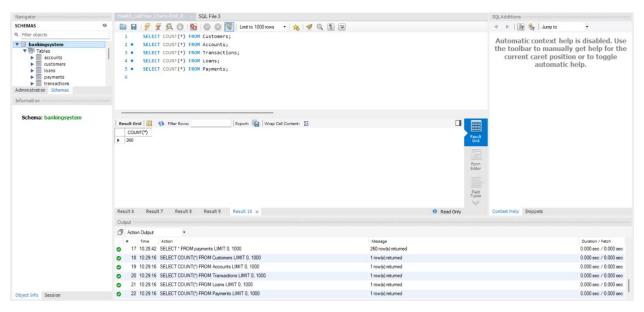
Description: This query lists all recorded loan payments, showing the amounts paid and the corresponding loan IDs. It helps track repayment progress and ensure accurate payment records.





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Title: Checking Record Counts

Description: These queries count the total records in each table to verify data insertion and database population.