

BANKING SYSTEM - STORED PROCEDURES EXPLANATION

This document outlines the stored procedures developed to handle operations in the Banking System. These procedures ensure data consistency, business rules enforcement, and secure user actions.

1. CREATECUSTOMER

 Purpose:

Creates a new customer record with all necessary fields.

 Parameters:

- @FirstName, @LastName
- @Email (unique), @Phone
- @DateOfBirth, @Gender
- @Address

 Logic:

- Checks if email already exists
- Inserts the record into Customers table
- Logs creation into AuditLog

2. OPENACCOUNT

 Purpose:

Creates a new account for an existing customer.

 Parameters:

- @CustomerID (FK)

- @BranchID (FK)
- @AccountType (Savings/Current/Salary)

✓ Logic:

- Checks for valid customer and branch
- Inserts into Accounts with zero balance
- Logs in AuditLog

3. DEPOSITMONEY

📌 Purpose:

Deposits money into a customer's account.

✂ Parameters:

- @AccountID
- @Amount
- @Description

✓ Logic:

- Rejects negative or zero deposit
- Checks if account is not frozen
- Adds to balance and logs in Transactions
- Records action in AuditLog

4. WITHDRAWMONEY

📌 Purpose:

Withdraws funds from an account.

✂ Parameters:

- @AccountID
- @Amount
- @Description

✅ Logic:

- Checks for sufficient balance
- Rejects frozen accounts
- Deducts amount and inserts transaction
- Logs in AuditLog

5. TRANSFERMONEY

📌 Purpose:

Transfers funds from one account to another.

✂ Parameters:

- @FromAccount
- @ToAccount
- @Amount
- @Description

✅ Logic:

- Both accounts must be valid and active
- No transfer to self
- Atomic transaction (uses `BEGIN TRAN`)
- Records transfer in Transactions (both ends)
- Logs in AuditLog

6. APPLYFORLOAN

 Purpose:

Creates a loan application linked to customer/account.

 Parameters:

- @CustomerID
- @AccountID
- @LoanType, @Amount
- @DurationMonths

 Logic:

- Validates customer/account
- Inserts new loan record with default status: 'Pending'
- Logs loan request in AuditLog

7. FREEZEACCOUNT / UNFREEZEACCOUNT

 Purpose:

Temporarily freezes an account (and restricts transactions).

 Parameters:

- @AccountID
- @Reason


 Logic:

- Updates status in Accounts table
- Inserts freeze record in AccountFreezeRecords
- AuditLog entry created

8. GENERATEMONTHLYSTATEMENT

 Purpose:

Generates a list of transactions for a given month.

 Parameters:

- @AccountID
- @Month, @Year (optional)

 Logic:

- Filters Transactions table by account and date
- Output ready to export/report

9. VIEWTRANSACTIONHISTORY

 Purpose:

Shows full transaction history of an account.

 Parameters:

- @AccountID

 Logic:

- Returns all transactions in descending date order

10. GETACCOUNTINSIGHTS

 Purpose:

Summarizes total credits, debits, net balance, etc.

✂ Parameters:

- @AccountID

✓ Logic:

- Uses aggregate functions to return financial summary