package b1;

import java.sql.CallableStatement;

import java.sql.Connection;

import java.sql.Date;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.util.Scanner;

public class BankRecurringDepositSystem {

private static final String DB\_URL = "jdbc:mysql://localhost:3306/bank";

private static final String DB\_USER = "root";

private static final String DB\_PASSWORD = "root"; // Replace with your MySQL password

public static void main(String[] args) {

try (Connection conn = DriverManager.getConnection(DB\_URL, DB\_USER, DB\_PASSWORD)) {

Scanner scanner = new Scanner(System.in);

int choice;

do {

System.out.println("\n--- Bank Recurring Deposit System ---");

System.out.println("1. Create Customer");

System.out.println("2. Create Recurring Deposit");

System.out.println("3. View All Deposits");

System.out.println("4. Exit");

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

scanner.nextLine();

switch (choice) {

case 1:

createCustomer(conn, scanner);

break;

case 2:

createRecurringDeposit(conn, scanner);

break;

case 3:

viewAllDeposits(conn);

break;

case 4:

System.out.println("Exiting the system. Goodbye!");

break;

default:

System.out.println("Invalid choice! Please try again.");

}

} while (choice != 4);

} catch (SQLException e) {

System.out.println("sql error"+e.getMessage());

}

}

private static void createCustomer(Connection conn, Scanner scanner) throws SQLException {

System.out.print("Enter customer name: ");

String name = scanner.nextLine();

System.out.print("Enter customer email: ");

String email = scanner.nextLine();

String sql = "{CALL CreateCustomer(?, ?)}";

try (CallableStatement stmt = conn.prepareCall(sql)) {

stmt.setString(1, name);

stmt.setString(2, email);

stmt.execute();

System.out.println("Customer created successfully!");

}

}

private static void createRecurringDeposit(Connection conn, Scanner scanner) throws SQLException {

System.out.print("Enter customer ID: ");

int customerID = scanner.nextInt();

System.out.print("Enter monthly installment amount: ");

double monthlyInstallment = scanner.nextDouble();

System.out.print("Enter duration (in months): ");

int durationInMonths = scanner.nextInt();

System.out.print("Enter interest rate (annual): ");

double interestRate = scanner.nextDouble();

System.out.print("Enter start date (YYYY-MM-DD): ");

scanner.nextLine(); // Consume newline

String startDate = scanner.nextLine();

String sql = "{CALL CreateRecurringDeposit(?, ?, ?, ?, ?)}";

try (CallableStatement stmt = conn.prepareCall(sql)) {

stmt.setInt(1, customerID);

stmt.setDouble(2, monthlyInstallment);

stmt.setInt(3, durationInMonths);

stmt.setDouble(4, interestRate);

stmt.setDate(5, Date.valueOf(startDate));

stmt.execute();

System.out.println("Recurring deposit created successfully!");

}

}

private static void viewAllDeposits(Connection conn) throws SQLException {

String sql = "{CALL ViewAllDeposits()}";

try (CallableStatement stmt = conn.prepareCall(sql)) {

ResultSet rs = stmt.executeQuery();

while (rs.next()) {

int depositID = rs.getInt("DepositID");

String name = rs.getString("Name");

String email = rs.getString("Email");

double monthlyInstallment = rs.getDouble("MonthlyInstallment");

int durationInMonths = rs.getInt("DurationInMonths");

double interestRate = rs.getDouble("InterestRate");

Date startDate = rs.getDate("StartDate");

double totalAmount = rs.getDouble("TotalAmount");

double interest = rs.getDouble("Interest");

double maturityAmount = rs.getDouble("MaturityAmount");

System.out.println("Deposit ID: " + depositID);

System.out.println("Customer Name: " + name);

System.out.println("Customer Email: " + email);

System.out.println("Monthly Installment: " + monthlyInstallment);

System.out.println("Duration (months): " + durationInMonths);

System.out.println("Interest Rate: " + interestRate + "%");

System.out.println("Start Date: " + startDate);

System.out.println("Total Amount: " + totalAmount);

System.out.println("Interest: " + interest);

System.out.println("Maturity Amount: " + maturityAmount);

System.out.println("---------------------------");

}

}

}

}

**MY SQL CODE:**

**CREATE DATABASE bank;**

**USE bank;**

**drop database bank;**

**-- Create Customers table**

**CREATE TABLE Customers (**

**CustomerID INT AUTO\_INCREMENT PRIMARY KEY,**

**Name VARCHAR(255) NOT NULL,**

**Email VARCHAR(255) NOT NULL**

**);**

**-- Create RecurringDeposits table**

**CREATE TABLE RecurringDeposits (**

**DepositID INT AUTO\_INCREMENT PRIMARY KEY,**

**CustomerID INT NOT NULL,**

**MonthlyInstallment DECIMAL(10,2) NOT NULL,**

**DurationInMonths INT NOT NULL,**

**InterestRate DECIMAL(5,2) NOT NULL,**

**StartDate DATE NOT NULL,**

**TotalAmount DECIMAL(10,2),**

**Interest DECIMAL(10,2),**

**MaturityAmount DECIMAL(10,2),**

**FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)**

**);**

**-- Create procedure for creating a customer**

**DELIMITER $$**

**CREATE PROCEDURE CreateCustomer(**

**IN p\_name VARCHAR(255),**

**IN p\_email VARCHAR(255)**

**)**

**BEGIN**

**INSERT INTO Customers (Name, Email)**

**VALUES (p\_name, p\_email);**

**END$$**

**DELIMITER ;**

**-- Create procedure for creating a recurring deposit**

**DELIMITER $$**

**CREATE PROCEDURE CreateRecurringDeposit(**

**IN p\_customerID INT,**

**IN p\_monthlyInstallment DECIMAL(10,2),**

**IN p\_durationInMonths INT,**

**IN p\_interestRate DECIMAL(5,2),**

**IN p\_startDate DATE,**

**OUT p\_success INT**

**)**

**BEGIN**

**DECLARE customerExists INT;**

**SELECT COUNT(\*) INTO customerExists FROM Customers WHERE CustomerID = p\_customerID;**

**IF customerExists > 0 THEN**

**INSERT INTO RecurringDeposits (CustomerID, MonthlyInstallment, DurationInMonths, InterestRate, StartDate)**

**VALUES (p\_customerID, p\_monthlyInstallment, p\_durationInMonths, p\_interestRate, p\_startDate);**

**SET p\_success = 1;**

**ELSE**

**SET p\_success = 0;**

**END IF;**

**END$$**

**DELIMITER ;**

**-- Create procedure for viewing all deposits**

**DELIMITER $$**

**CREATE PROCEDURE ViewAllDeposits()**

**BEGIN**

**SELECT rd.DepositID, c.Name, c.Email, rd.MonthlyInstallment, rd.DurationInMonths,**

**rd.InterestRate, rd.StartDate, rd.TotalAmount, rd.Interest, rd.MaturityAmount**

**FROM RecurringDeposits rd**

**INNER JOIN Customers c ON rd.CustomerID = c.CustomerID;**

**END$$**

**DELIMITER ;**