BANK APPLICATION

BANK INTERFACE:

```
package BANKAPP;

import java.util.Scanner;

public interface BANKAPP {

	void createAccount(String AccountHolder,int pin,double initialDeposit);
	void login(int accountNumber,int pin) throws Exception;
	void withdraw(double amount)throws Exception;
	void deposite(double amount)throws Exception;
	double getBalance();
	int getAccountNumber();

}

//custom Exceptions


   class InsufficientbalanceException extends Exception{
	public InsufficientbalanceException(String message) {
		super(message);
	}
   }

   class MinbalanceException extends Exception{
	public MinbalanceException(String message) {
		super(message);
	}
   }

   class MaxdepositeAmountException extends Exception{
	public MaxdepositeAmountException(String message) {
		super(message);
	}
   }

   class MindepositeAmountException extends Exception{
	public MindepositeAmountException(String message) {
		super(message);
	}
```

```
}

//Bank implementation class implements


class BankImplementation implements BANKAPP{

        private static final double MIN_BALANCE = 100.00;
        private static final double MAX_DEPOSIT_AMOUNT  = 50000.00;
        private static final double MIN_DEPOSIT_AMOUNT = 50.0;


        private int AccountNumber;
        private String AccountHolder;
        private int Pin;
        private double Balance;
        private boolean LoggedIn = false;

        @Override
         public void createAccount(String AccountHolder,int pin,double initialDeposit) {

                this.AccountNumber = (int) (Math.random() * 10000);
                // Simple account number generator

                this.AccountHolder = AccountHolder;
                this.Pin = pin;
                this.Balance = initialDeposit;

         System.out.println("ACCOUNT CREATED SUCCESSFULLY!! YOUR
ACCOUNT NUMBER IS :  " +this.AccountNumber);


        }

        @Override
        public void login(int accountNumber,int pin) throws Exception{

                if(this.AccountNumber == accountNumber && this.Pin == pin) {

                        LoggedIn = true;
                        System.out.println("LOGIN SUCCESSFULLY.. WELCOME!! "
+AccountHolder);

                }
                else {
                        throw new Exception("INVALID ACCOUNT NUMBER OR PIN");
                }

        }
```

```
        @Override
        public void withdraw(double amount) throws Exception {

                if(!LoggedIn) {
                        throw new Exception("PLEASE LOGIN TO PROCEED");
                }

                 if(amount > Balance - MIN_BALANCE) {
                        throw new Exception ("Insufficient balance for this withdrawal!");
                }
                if (Balance - amount < MIN_BALANCE) {
            throw new Exception("Withdrawal denied! Minimum balance of " +
MIN_BALANCE + " must be maintained.");
        }

                Balance -= amount;
        System.out.println("Withdrawal successful! New balance: " + Balance);
    }


        @Override

        public void deposite(double amount)throws Exception{

                if (!LoggedIn) {
            throw new Exception("Please login to proceed.");
        }
        if (amount > MAX_DEPOSIT_AMOUNT) {
            throw new Exception("Deposit limit exceeded! Maximum deposit allowed is " +
MAX_DEPOSIT_AMOUNT);
        }
        if (amount < MIN_DEPOSIT_AMOUNT) {
            throw new Exception("Deposit amount too low! Minimum deposit allowed is " +
MIN_DEPOSIT_AMOUNT);
        }
        Balance += amount;
        System.out.println("Deposit successful! New balance: " + Balance);
    }

        @Override
    public double getBalance() {
        if (LoggedIn) {
            return Balance;
        } else {
            System.out.println("Please login to view balance.");
            return 0;
        }
    }
```

```
        @Override
        public int getAccountNumber() {
            // TODO Auto-generated method stub
            return this.AccountNumber;
        }

    }
```

BANK CLASS(MAIN CLASS ENTRY POINT)

```
package BANKAPP;

import java.util.Scanner;

public class MAINBANK{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        BankImplementation bank = new BankImplementation();
        System.out.println("WELCOME TO BANKAPP!!");

        // Account creation
    System.out.print("Enter your name: ");
    String name = scanner.nextLine();
    System.out.print("Create a 4-digit PIN: ");
    int pin = scanner.nextInt();
    System.out.print("Enter initial deposit amount: ");
    double initialDeposit = scanner.nextDouble();
    bank.createAccount(name, pin, initialDeposit);

    int generatedAccountNumber = bank.getAccountNumber();  // Retrieve the account number for display
    System.out.println("Your Account Number is: " + generatedAccountNumber);
    //Login

    try {
        System.out.print("Enter your account number to login: ");
        int accountNumber = scanner.nextInt();
        System.out.print("Enter your PIN: ");
        int Pin = scanner.nextInt();
        bank.login(accountNumber, Pin);

        // Menu
        int choice;
        do {
            System.out.println("\nSelect an option:");
```

```
            System.out.println("1. Withdraw");
            System.out.println("2. Deposit");
            System.out.println("3. Balance Inquiry");
            System.out.println("4. Exit");
            System.out.print("Your choice: ");
            choice = scanner.nextInt();

            switch (choice) {
                case 1:
                    // Withdraw
                    System.out.print("Enter amount to withdraw: ");
                    double withdrawAmount = scanner.nextDouble();
                    try {
                        bank.withdraw(withdrawAmount);
                    } catch (InsufficientbalanceException| MinbalanceException e) {
                        System.out.println("Error: " + e.getMessage());
                    }
                    break;
                case 2:  // Deposit
                    System.out.print("Enter amount to deposit: ");
                    double depositAmount = scanner.nextDouble();
                    try {
                        bank.deposite(depositAmount);
                    } catch (MaxdepositeAmountException | MindepositeAmountException e) {
                        System.out.println("Error: " + e.getMessage());
                    }
                    break;
                case 3:  // Balance Inquiry
                    System.out.println("Your current balance is: " + bank.getBalance());
                    break;
                case 4:  // Exit
                    System.out.println("Thank you for using BankApp!");
                    break;
                default:
                    System.out.println("Invalid option! Please select again.");
                    break;
            }
        } while (choice != 4);
    } catch (Exception e) {
        System.out.println("Error: " + e.getMessage());
    } finally {
        scanner.close();
    }
  }
}
```

OUTPUT

```
WELCOME TO BANKAPP!!
Enter your name: chhaya
Create a 4-digit PIN: 2002
Enter initial deposit amount: 20000.00
ACCOUNT CREATED SUCCESSFULLY!! YOUR ACCOUNT NUMBER IS :  6957
Your Account Number is: 6957
Enter your account number to login: 6957
Enter your PIN: 2002
LOGIN SUCCESSFULLY.. WELCOME!! chhaya

Select an option:
1. Withdraw
2. Deposit
3. Balance Inquiry
4. Exit
Your choice: 2
Enter amount to deposit: 25000.00
Deposit successful! New balance: 45000.0

Select an option:
1. Withdraw
2. Deposit
3. Balance Inquiry
4. Exit
Your choice: 1
Enter amount to withdraw: 2500.00
Withdrawal successful! New balance: 42500.0

Select an option:
1. Withdraw
2. Deposit
3. Balance Inquiry
4. Exit
Your choice: 3
Your current balance is: 42500.0

Select an option:
1. Withdraw
2. Deposit
3. Balance Inquiry
4. Exit
Your choice: 4
Thank you for using BankApp!
```