**Task 1**

**Date of Submission: - 10/06/2024**

Aim: **Create a fully functional ATM interface using Java.**

**Code:**

import java.util.Scanner;

class Account {

private double balance;

private final int pin;

public Account(double initialBalance, int pin) {

if (initialBalance > 0.0) {

balance = initialBalance;

}

this.pin = pin;

}

public void credit(double amount) {

balance += amount;

}

public boolean debit(double amount) {

if (amount > balance) {

System.out.println("Debit amount exceeded account balance.");

return false;

} else {

balance -= amount;

return true;

}

}

public double getBalance() {

return balance;

}

public boolean validatePin(int inputPin) {

return this.pin == inputPin;

}

}

public class ATM {

private static Scanner scanner = new Scanner(System.in);

private static Account account = new Account(1000.0, 1234); // Initial balance and PIN for the account

public static void main(String[] args)

{

boolean userAuthenticated = authenticateUser();

if (userAuthenticated)

{

boolean userExited = false;

while (!userExited)

{

displayMainMenu();

int mainMenuSelection = scanner.nextInt();

switch (mainMenuSelection) {

case 1:

viewBalance();

break;

case 2:

withdraw();

break;

case 3:

deposit();

break;

case 4:

userExited = true;

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

break;

default:

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

break;

}

}

}

else

{

System.out.println("Invalid PIN. Exiting the system...");

}

}

private static boolean authenticateUser()

{

System.out.print("Welcome!\nPlease enter your PIN: ");

int inputPin = scanner.nextInt();

return account.validatePin(inputPin);

}

private static void displayMainMenu()

{

System.out.println("\nMain menu:");

System.out.println("1 - View my balance");

System.out.println("2 - Withdraw cash");

System.out.println("3 - Deposit funds");

System.out.println("4 - Exit\n");

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

}

private static void viewBalance()

{

System.out.printf("\nBalance Information:\n - Available balance: $%.2f\n", account.getBalance());

}

private static void withdraw()

{

System.out.print("\nEnter an amount to withdraw: ");

double amount = scanner.nextDouble();

if (amount<=0)

{

System.out.println("Withdrawal amount must be greater than zero.");

}

else if(account.debit(amount))

{

System.out.printf("Successfully withdrew $%.2f\n", amount);

}

}

private static void deposit()

{

System.out.print("\nEnter an amount to deposit: ");

double amount = scanner.nextDouble();

if (amount <= 0)

{

System.out.println("Deposit amount must be greater than zero.");

}

else

{

account.credit(amount);

System.out.printf("Successfully deposited $%.2f\n", amount);

}

}

}

A screenshot of a computer screen

Description automatically generated**Output:**

A screenshot of a computer

Description automatically generated