import java.util.Scanner;

class PiggyBank {

private double balance;

public PiggyBank() {

balance = 0.0;

}

public double getBalance() {

return balance;

}

public void deposit(double amount) {

balance += amount;

}

public boolean withdraw(double amount) {

if (amount > balance) {

System.out.println("Insufficient funds.");

return false;

} else {

balance -= amount;

System.out.println("Withdrawal successful. Amount withdrawn: " + amount);

return true;

}

}

}

public class Main {

private PiggyBank piggyBank;

private int pin;

public Main(PiggyBank piggyBank) {

this.piggyBank = piggyBank;

this.pin = 1234;

}

public void displayOptions() {

System.out.println("\nATM Options:");

System.out.println("1. Withdraw ");

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

System.out.println("3. Check Balance ");

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

}

public void processOption(int option) {

Scanner scanner = new Scanner(System.in);

switch (option) {

case 1:

System.out.print("Enter amount to withdraw: ");

double withdrawAmount = scanner.nextDouble();

piggyBank.withdraw(withdrawAmount);

break;

case 2:

System.out.print("Enter amount to deposit: ");

double depositAmount = scanner.nextDouble();

piggyBank.deposit(depositAmount);

System.out.println("Deposit successful. Amount deposited: " + depositAmount);

break;

case 3:

System.out.println("Current balance: " + piggyBank.getBalance());

break;

case 4:

System.out.println("Exiting ATM. Thank you!");

System.exit(0);

break;

default:

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

}

}

public void authenticate() {

Scanner scanner = new Scanner(System.in);

System.out.println("Welcome to the ATM.");

System.out.print("Please enter your PIN: ");

int enteredPin = scanner.nextInt();

if (enteredPin == pin) {

System.out.println("PIN authenticated. Welcome!");

while (true) {

displayOptions();

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

int choice = scanner.nextInt();

processOption(choice);

}

} else {

System.out.println("Invalid PIN. Access denied.");

}

}

public static void main(String[] args) {

PiggyBank piggyBank = new PiggyBank();

Main atm = new Main(piggyBank);

atm.authenticate();

}

}

OUTPUT:

Welcome to the ATM.

Please enter your PIN: 1234

PIN authenticated. Welcome!

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 3

Current balance: 0.0

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 2

Enter amount to deposit: 300000

Deposit successful. Amount deposited: 300000.0

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 3

Current balance: 300000.0

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 1

Enter amount to withdraw: 500

Withdrawal successful. Amount withdrawn: 500.0

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 3

Current balance: 299500.0

ATM Options:

1. Withdraw

2. Deposit

3. Check Balance

4. Exit

Enter your choice: 4

Exiting ATM. Thank you!

=== Code Execution Successful ===