import java.util.InputMismatchException;

import java.util.Scanner;

class BankAccount {

    private double balance;

    public BankAccount(double initialBalance) {

        this.balance = initialBalance;

    }

    public double getBalance() {

        return balance;

    }

    public void deposit(double amount) {

        if (amount > 0) {

            balance += amount;

            System.out.println("Successfully deposited: $" + amount);

        } else {

            System.out.println("Invalid deposit amount. Please enter a positive number.");

        }

    }

    public boolean withdraw(double amount) {

        if (amount > 0 && amount <= balance) {

            balance -= amount;

            System.out.println("Successfully withdrawn: $" + amount);

            return true;

        } else {

            System.out.println("Insufficient balance or invalid withdrawal amount.");

            return false;

        }

    }

}

class ATM {

    private BankAccount account;

    private Scanner scanner;

    public ATM(BankAccount account) {

        this.account = account;

        this.scanner = new Scanner(System.in);

    }

    public void start() {

        while (true) {

            System.out.println("\nWelcome to the ATM");

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

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

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

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

            System.out.print("Choose an option: ");

            int choice = getValidIntInput();

            switch (choice) {

                case 1:

                    withdraw();

                    break;

                case 2:

                    deposit();

                    break;

                case 3:

                    checkBalance();

                    break;

                case 4:

                    System.out.println("Thank you for using the ATM. Goodbye!");

                    scanner.close();

                    return;

                default:

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

            }

        }

    }

    private void withdraw() {

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

        double amount = getValidDoubleInput();

        if (amount > 0) {

            if (account.withdraw(amount)) {

                System.out.println("Please take your cash.");

            }

        } else {

            System.out.println("Withdrawal amount must be positive.");

        }

    }

    private void deposit() {

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

        double amount = getValidDoubleInput();

        if (amount > 0) {

            account.deposit(amount);

        } else {

            System.out.println("Deposit amount must be positive.");

        }

    }

    private void checkBalance() {

        System.out.println("Your current balance is: $" + account.getBalance());

    }

    private int getValidIntInput() {

        while (true) {

            try {

                return scanner.nextInt();

            } catch (InputMismatchException e) {

                System.out.print("Invalid input. Please enter a number: ");

                scanner.next(); // Clear invalid input

            }

        }

    }

    private double getValidDoubleInput() {

        while (true) {

            try {

                return scanner.nextDouble();

            } catch (InputMismatchException e) {

                System.out.print("Invalid input. Please enter a valid number: ");

                scanner.next(); // Clear invalid input

            }

        }

    }

}

public class Main {

    public static void main(String[] args) {

        BankAccount account = new BankAccount(5000.00); // Initial balance of $5000

        ATM atm = new ATM(account);

        atm.start();

    }

}

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| --- | --- |
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