----------CODE 3----------

```
import java.util.Scanner;




// Class representing a user's bank account
class BankAccount {
    private double balance;

    public BankAccount(double initialBalance) {
        if (initialBalance >= 0) {
            this.balance = initialBalance;
        } else {
            System.out.println("Initial balance must be positive. Setting balance to 0.");
            this.balance = 0;
        }
    }

    // Method to deposit money into the account
    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("Deposited: $" + amount);
        } else {
            System.out.println("Deposit amount must be positive.");
        }
    }

    // Method to withdraw money from the account
```

```
    public boolean withdraw(double amount) {
        if (amount > 0 && amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawn: $" + amount);
            return true;
        } else if (amount <= 0) {
            System.out.println("Withdrawal amount must be positive.");
        } else {
            System.out.println("Insufficient funds. Your current balance is $" + balance);
        }
        return false;
    }

    // Method to check the current balance
    public double checkBalance() {
        return balance;
    }
}

// Class representing the ATM machine interface
class ATM {
    private BankAccount account;

    public ATM(BankAccount account) {
        this.account = account;
    }

    // Display the menu and allow the user to interact with the ATM
    public void showMenu() {
        Scanner scanner = new Scanner(System.in);
        int option;
```

```
    do {
        System.out.println("\nWelcome to the ATM!");
        System.out.println("1. Check Balance");
        System.out.println("2. Deposit");
        System.out.println("3. Withdraw");
        System.out.println("4. Exit");
        System.out.print("Please choose an option (1-4): ");
        option = scanner.nextInt();

        switch (option) {
            case 1:
                checkBalance();
                break;
            case 2:
                deposit();
                break;
            case 3:
                withdraw();
                break;
            case 4:
                System.out.println("Thank you for using the ATM. Goodbye!");
                break;
            default:
                System.out.println("Invalid option. Please try again.");
        }
    } while (option != 4);
    scanner.close();
}

// Method to check balance
private void checkBalance() {
```

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

    // Method to deposit money
    private void deposit() {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the amount to deposit: $");
        double amount = scanner.nextDouble();
        account.deposit(amount);
    }

    // Method to withdraw money
    private void withdraw() {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the amount to withdraw: $");
        double amount = scanner.nextDouble();
        account.withdraw(amount);
    }
}

public class Main {
    public static void main(String[] args) {
        // Create a bank account with an initial balance of $500
        BankAccount myAccount = new BankAccount(500.0);

        // Create an ATM connected to the bank account
        ATM atm = new ATM(myAccount);

        // Show ATM menu to the user
        atm.showMenu();
    }
```

```
}
```