Task 1

Java Programming Intern

Project: Fully Functional ATM Interface using Java

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1. Introduction

The purpose of this internship project is to design and implement a fully functional ATM interface using Java. The project simulates core banking functionalities such as user authentication, balance inquiry, cash deposit, cash withdrawal, and account management.

2. Objective

- Build an interactive console-based ATM system using Java.

- Implement basic banking operations: Check balance, Deposit money, Withdraw money, Exit.

- Strengthen understanding of core Java concepts.

- Ensure proper error handling and user input validation.

3. Tools & Technologies Used

1. Java (JDK 8 or higher): Programming language

2. Online Java Compiler: To compile and execute Java code

3. Console-based UI: For user interaction

4. Project Structure

ATM-Interface/

```
 - Main.java         // Entry point of the application containing ATM operations
```

5. Java Code (Main.java)

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        double balance = 5000.0;
        int pin = 1234;

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

        System.out.print("Enter PIN: ");
        int enteredPin = scanner.nextInt();

        if (enteredPin == pin) {
            while (true) {
                System.out.println("\n1. Check Balance");
                System.out.println("2. Deposit");
                System.out.println("3. Withdraw");
                System.out.println("4. Exit");
                System.out.print("Choose option: ");
                int choice = scanner.nextInt();

                switch (choice) {
                    case 1:
                        System.out.println("Balance: $" + balance);
                        break;
                    case 2:
                        System.out.print("Enter amount to deposit: ");
                        double deposit = scanner.nextDouble();
                        balance += deposit;
                        System.out.println("Deposited successfully.");
                        break;
                    case 3:
                        System.out.print("Enter amount to withdraw: ");
                        double withdraw = scanner.nextDouble();
                        if (withdraw <= balance) {
                            balance -= withdraw;
                            System.out.println("Withdrawal successful.");
                        } else {
                            System.out.println("Insufficient balance.");
                        }
                        break;
                    case 4:
                        System.out.println("Thank you for using ATM!");
                        System.exit(0);
                    default:
                        System.out.println("Invalid option.");
                }
            }
        } else {
            System.out.println("Incorrect PIN.");
        }
    }
}
```

6. Practical Output Example

```
--- ATM Interface Output ---
Welcome to ATM!
Enter PIN: 1234

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 1
Balance: $5000.0
```

```
1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 2
Enter amount to deposit: 1500
Deposited successfully.

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 1
Balance: $6500.0

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 3
Enter amount to withdraw: 1000
Withdrawal successful.

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 1
Balance: $5500.0

1. Check Balance
2. Deposit
3. Withdraw
4. Exit
Choose option: 4
Thank you for using ATM!
```

7. Challenges Faced

1. Handling invalid inputs.

2. Designing efficient authentication.

3. Implementing proper error handling.

4. Managing user inputs and edge cases.

8. Future Scope & Improvements

1. Implement money transfer feature.

2. Add persistent storage (file/database).

3. Develop GUI using Swing or JavaFX.

4. Add transaction history feature.

9. Conclusion

Through this internship project, I gained practical experience in Java programming and understood how to implement a real-world banking system simulation.