Alexandria University
Faculty of Engineering
Specialized Scientific Programs
Spring 2019



Computer and Communication CS272:Programming 2 Assignment 1 Assigned: 28/2/2019

Due: 15/3/2019

Assignment 1

Simple ATM

Objectives

- Getting Started with JAVA Programming Language.
- Becoming familiar with Java IDE (e.g., eclipse, NetBeans, ...).
- Develop a simple GUI to input and display application data.
- Apply OOP principles to your GUI code.

Description

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It is required to implement a simple ATM that supports the following:

- Withdrawal, Deposit and Balance Inquiry.
- History navigation through the last 5 transactions.
- First you need to validate card number against a pre-defined number in your system.
- The main menu contains:
 - 1. Five buttons: Withdrawal, Deposit, Balance Inquiry, Previous and Next (the last two for history navigation)
 - 2. One label: to show either your current balance when hitting **Balance Inquiry** button or history navigation when hitting **Previous** or **Next** buttons.
- When hitting **Withdraw** or **Deposit** buttons, user should be navigated to another window to enter the amount. You can use **buttons** representing numbers from 0 to 9 to take the input and **label** to show it.
- History should be updated after every successful transaction.
- Handle different special cases and show error dialogs when necessary (e.g. withdrawal amount is greater than the current balance, etc...).
- [You should create at least 2 classes] The best design is to create a class/classes and make sure all the logic is working, then create a new class/classes for the GUI.
- It is better to create an interface in the middle between logic class and GUI class/classes.
- [Hint] You can make a separate class called **Transaction** to hold the transaction type and value.

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References

Java Tutorial: <u>Link1</u>, <u>Link2</u>, <u>Link3</u>.

• GUI Tutorial: Link1, Link2, Link3, Link4.

• GUI Swing basics: Link1, Link2.

• GUI SWT & JavaFX basics: Link1, Link2.

• Google is your best friend 😊

Proposed Interface

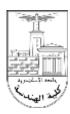
[Not mandatory] We shall propose this interface for you, you can use it if you want, you can make any changes you see fit to your design.

```
PublicinterfaceATM {
    //Returnsthe current balance in string format
    public String getCurrentBalance();
    //withdraws from current balance and updates it
    publicvoid withdraw(String amount);
    //adds to the current balance and updates it
    publicvoiddeposit(String amount);
    //returns the prevtransaction in String format, or Null if no more history
    public String prev();
//returns the next transaction in String format, or Null if no morehistory
public String next();
}
```

And use it like this:

```
PublicclassMyATM implementsATM{
  /* must override all the interface's functions */
}
```

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Deliverables

- Develop this assignment in Java programming language.
- You should submit your code online at the deadline, wait for the submission instructions on Piazza.
- You can use any graphics libraries (e.g. Swing, SWT, FX, ...), but text-mode user interface is not allowed.
- You should work individually.
- Late submission is accepted for only one week.
- [Cheating Policy] Delivering a copy will be severely penalized for both parties, so delivering nothing is so much better than delivering a copy.
- [Late Policy] Late delivery of the code will be allowed until 3 days after the deadline, with a penalty of 30% of the final mark.

Good Luck ©