**Assignment 2: Fundamentals of Programming 1**

**Date issued: Wednesday 20st November 2013**

**Due date: Wednesday 11th December 2013 by 2:00PM**

**\*\*N.B.\*\* Submit this assignment using Moodle before the above date.**

**Assignment Marking: 15% of overall**

**Description**

Create a Java program that acts as a Debit Card Top-up system and balance tracking system for a bank customer [A debit card is a card that needs to have money put into it before using it, very like topping up a mobile balance]. The Debit Card system will enable a single customer to do the following:

* Login with a username and password (of type String)
* Get the customer details, i.e., name and card number
* Get the customer balance, i.e. how much money is left on the card
* Top-Up (increase the balance by a maximum of 100 euro)
* Make a purchase (you may assume one transaction is 20 euro)

You may make the following assumptions about the program:

* There is only one customer
* The DEBIT CARD number is not real (just a String, e.g., “123456789”)
* The opening balance is 0 euro
* The maximum balance is 1000 euro
* No purchase can be made if there isn’t enough money

You must attempt to use a minimum of **ONE method** in your program (this does not include the main method. The following are suggested methods for your program):

* showServiceMenu(); //shows the options to the user
* TopUp(double topUpAmount);
* outputCustomerDetails();
* printBalance();
* sendText(String message);
* makeCall(String numberToCall);

Where possible you should try to catch errors in your program, e.g., it is not possible for your balance to be less than zero. The user must get the password correct to avail of the services. The program must run continuously until an exit option is selected.

# The required classes:

Just one class is required for this program (a Java application).

# What to upload to moodle:

One zip file with the source code (.java file) used in the program.

**\*\*\*N.B.\*\*\* Proposed Marking Scheme:**

Marks awarded using the following scheme as a guide **[Total 100 Marks]:**

1. The program compiles and contains reasonable code attempts **[5 marks]**

2. The ‘main’ method is properly written and executes **[5 marks]**

3. Variables used, appropriate types/assignment/initialized **[15 marks]**

4. Methods **[Total 15 marks, split as follows:]**

* Method naming and structure **[5 marks]**
* Method works, i.e., does what is says only **[5 marks]**
* Method parameters and/or variables **[5 marks]**

6. Basic class structure and naming **[5 marks]**

7. Commenting used to explain and label code **[5 marks]**

8. Indentation of code blocks **[5 marks]**

9. Program works to specification (split up as follows):

* Quit option **[5 marks]**
* Menu options/display **[10 marks]**
* Login option **[5 marks]**
* Balance tracking/updating **[15 marks]**
* Error Checking **[10 marks]**

# Note :

This is an individual assignment any student involved in collusion will get 0% (i.e. DON’T COPY!)

Any assessments handed up LATER than the above deadline will receive 0% (If there are any genuine circumstances affecting the delivery date it is your responsibility to inform the lecturer)

You **CAN** ask me questions and ask me (or other lab lecturers) for help with this assignment during the labs and lectures. Also, feel free to e-mail any queries to me or open up forum discussions on Moodle.