



**American International University- Bangladesh (AIUB)**  
**Department of Computer Science**  
**Software Quality and Testing**  
**Summer 2015-2016**

**Project 1: Developing a Test Plan for a Banking System**

**Objective:**

The objective of this project is to develop a test plan. The students will apply their knowledge and understanding learned from the course in order to develop the test plan. Based on the requirements and functionalities of the system under test, the students will write the Test Plan.

**Submission Rules:**

**Deadline:** June 15, 2016 (Wednesday)

**Group:** Group of four (maximum) / Group of three (minimum); you have to choose your project-partners

**Submission:** You have to submit a hard copy of the test plan

**Project marks:** 10% of the midterm marks

**Late submission:** Not allowed (you will get zero if you submit after deadline)

**Problem Statement:**

Your software firm **Datasoft Inc.** has been awarded a contract to develop software for **AIUB Bank Limited**. You are the Test Lead of the project. Based on the requirements and functionalities of the system, you have to develop (write) a software test plan. General description and specifications of the software application are as follows:

AIUB Bank Limited has several automated teller machines (ATMs) which are geographically distributed and connected via a wide area network to a central server. Each ATM machine has a card reader, a cash dispenser, a keyboard/display, and a receipt printer. By using the ATM machine, a customer can withdraw cash from either checking or savings account, query the balance of an account, or transfer funds from one account to another.

A transaction is initiated when a customer inserts an ATM card into the card reader. Encoded on the magnetic strip on the back of the ATM card is the card number, the start date, and the expiration date. Assuming the card is recognized, the system validates the ATM card to determine that the expiration

date has not passed, that the user-entered PIN (personal identification number) matches the PIN maintained by the system, and that the card is not lost or stolen. The customer is allowed three attempts to enter the correct PIN; the card is confiscated if the third attempt fails. Cards that have been reported lost or stolen are also confiscated.

If the PIN is validated satisfactorily, the customer is prompted for a withdrawal, query, or transfer transaction. Before withdrawal transaction can be approved, the system determines that sufficient funds exist in the requested account, that the maximum daily limit will not be exceeded, and that there are sufficient funds available at the local cash dispenser. If the transaction is approved, the requested amount of cash is dispensed, a receipt is printed containing information about the transaction, and the card is ejected. Before a transfer transaction can be approved, the system determines that the customer has at least two accounts and that there are sufficient funds in the account to be debited. For approved query and transfer requests, a receipt is printed and card is ejected. A customer may cancel a transaction at any time; the transaction is terminated and the card is ejected. Customer records, account records, and debit card records are all maintained at the server.

An ATM operator may start up and close down the ATM to replenish the ATM cash dispenser and for routine maintenance. It is assumed that functionality to open and close accounts and to create, update, and delete customer and debit card records is provided by an existing system and is not part of this problem.

The software has the following set of specific requirements:

- The AIUB Bank Limited can have many automated teller machines (ATMs), and the new software system will provide functionality on all ATMs.
- The system will enable the customers of AIUB Bank Limited, who have valid ATM cards, to perform three types of transactions
  - 1) Withdrawal of funds
  - 2) Query of account balance
  - 3) Transfer of funds from one bank account to another account in the same bank
- An ATM card usage will be considered valid if it meets the following conditions:
  - The card was issued by an authorized bank
  - The card is used after the start date (i.e. the date when the card was issued)
  - The card is used before the expiration date (i.e. the date when the card expires)
  - The card has not been reported lost or stolen by the customer, who had been issued that card
  - The customer provides correct personal identification number (PIN), which matches the PIN maintained by the system
- The system will confiscate the ATM card if it detects that a lost or stolen card has been inserted by a customer. The system will also display an apology to the customer.
- The system will allow the customer to enter the correct PIN in no more three attempts. The failure to provide correct PIN in three attempts will result in the confiscation of the ATM card.

- The system will ask for the transaction type after satisfactory validation of the customer PIN. The customer will be given three options: withdrawal transaction, or query transaction, or transfer transaction.
- If a customer selects withdrawal transaction, the system will prompt the customer to enter account number and amount to be dispensed.
- For a withdrawal transaction, the system will determine that sufficient funds exist in the requested account, that the maximum daily limit has not been exceeded, and that there are sufficient funds available at the local cash dispenser.
- If a withdrawal transaction is approved, the requested amount of cash will be dispensed, a receipt will be printed containing information about the transaction, and the card will be ejected. The information printed on the receipt includes transaction number, transaction type, amount withdrawn, and account balance.
- If a customer selects query transaction, the system will prompt the customer to enter account number.
- If a query transaction is approved, the system will print a receipt and eject the card. The information contained on the receipt includes transaction number, transaction type, and account balance.
- If a customer selects transfer transaction, the system will prompt the customer to enter from account number, to account number, and amount to be transferred.
- The system will check if there are enough funds available in the 'from account', which are being requested for transfer to the 'to account'.
- If the transfer transaction is approved, a receipt will be printed and the card will be ejected. The information printed on the receipt includes transaction number, transaction type, amount type, and account balance.
- The system will cancel any transaction if it has not been completed if the customer presses the Cancel button.
- The customer records, account records, and debit card records will all be maintained at the server and will not be the responsibility of the system.
- The system will enable an ATM operator to shutdown or start up an ATM for routine maintenance.
- The system will enable an ATM operator to add cash to the cash dispenser.
- The system will not be responsible for opening or closing of accounts, and to create, update, or delete customer and debit card records. These tasks are performed elsewhere by the bank.
- The system will be linked with the bank server through communication systems, which are beyond the scope of the current system. It is assumed that this facility is always available.
- The system will not be responsible for the maintenance of the hardware devices of the ATM or network facilities.

**AIUB Bank Limited**  
**(MTP ABLT 1.1)**

Prepared by Foujia Akter

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## 01. Test Plan Identifier:

The name of the test plan is “A Banking System for AIUB Bank Limited (MTP\_ABLT\_1.1)”

## 02. References:

- **TEST PLAN OUTLINE (IEEE829FORMAT)**

- **The software has the following set of requirements:**

- 1) The AIUB Bank Limited can have many automated teller machines (ATMs), and the new software system will provide functionality on all ATMs.
- 2) The system will enable the customers of AIUB Bank Limited, who have valid ATM cards, to perform three types of transactions
  - a) Withdrawal of funds
  - b) Query of account balance
  - c) Transfer of funds from one bank account to another account in the same bank
- 3) An ATM card usage will be considered valid if it meets the following conditions:
  - a. The card was issued by an authorized bank
  - b. The card is used after the start date (i.e. the date when the card was issued)
  - c. The card is used before the expiration date (i.e. the date when the card expires)
  - d. The card has not been reported lost or stolen by the customer, who had been issued that card
  - e. The customer provides correct personal identification number (PIN), which matches the PIN maintained by the system
- 4) The system will confiscate the ATM card if it detects that a lost or stolen card has been inserted by a customer. The system will also display an apology to the customer.
- 5) The system will allow the customer to enter the correct PIN in no more three attempts. The failure to provide correct PIN in three attempts will result in the confiscation of the ATM card.
- 6) The system will ask for the transaction type after satisfactory validation of the customer PIN. The customer will be given three options: withdrawal transaction, or query transaction, or transfer transaction.
- 7) If a customer selects withdrawal transaction, the system will prompt the customer to enter account number and amount to be dispensed.
- 8) For a withdrawal transaction, the system will determine that sufficient funds exist in the requested account, that the maximum daily limit has not been

exceeded, and that there are sufficient funds available at the local cash dispenser.

- 9) If a withdrawal transaction is approved, the requested amount of cash will be dispensed, a receipt will be printed containing information about the transaction, and the card will be ejected. The information printed on the receipt includes transaction number, transaction type, amount withdrawn, and account balance.
- 10) If a customer selects query transaction, the system will prompt the customer to enter account number.
- 11) If a query transaction is approved, the system will print a receipt and eject the card. The information contained on the receipt includes transaction number, transaction type, and account balance.
- 12) If a customer selects transfer transaction, the system will prompt the customer to enter from account number, to account number, and amount to be transferred.
- 13) The system will check if there are enough funds available in the 'from account', which are being requested for transfer to the 'to account'.
- 14) If the transfer transaction is approved, a receipt will be printed and the card will be ejected. The information printed on the receipt includes transaction number, transaction type, amount type, and account balance.
- 15) The system will cancel any transaction if it has not been completed if the customer presses the Cancel button.
- 16) The customer records, account records, and debit card records will all be maintained at the server and will not be the responsibility of the system.
- 17) The system will enable an ATM operator to shut down or start up an ATM for routine maintenance.
- 18) The system will enable an ATM operator to add cash to the cash dispenser.
- 19) The system will not be responsible for opening or closing of accounts, and to create, update, or delete customer and debit card records. These tasks are performed elsewhere by the bank.
- 20) The system will be linked with the bank server through communication systems, which are beyond the scope of the current system. It is assumed that this facility is always available.
- 21) The system will not be responsible for the maintenance of the hardware devices of the ATM or network facilities.

### 03. Introduction

This is a high-level document for **AIUB Bank Limited**, this document define our testing strategy (Test Plan) for the software requirements of an automated teller machines (ATMs). The main objective of this test plan is to ensure automated teller machines (ATMs) system working proficiently and precisely as the given requirement.

### 04. Test Items

A list of what is to be tested:

- System of software functionality
- Performance of software
- One Card have one unique PIN
- Handling / checking PIN
- Stolen/lost notification
- Transfer transaction system
- Withdrawal transaction system
- Query transaction system
- Balance transfer
- Validation of the ATM card
- Check the funds are available in the system
- Printing receipt with correctness
- Maximum daily limits of transection

### 05. Software risk issues

- The Transaction Function's Safety issue
- Checking pin number
- Validation of the card
- Give correct information about available funds
- Stolen/lost notification
- Check of all 3rd party delivery products
- Checking the most complex Function

### 06. Features to be tested

A list of what Features is to be tested:

- The card is issued by an authorized bank then customer /user can use it

- The system
  - linked with the bank server

## **06. Features to be tested(cont.)**

- enable an ATM operator to shut down or start up an ATM for routine maintenance
- enable an ATM operator to add cash to the cash dispenser.
- System recognized card number ,start date and expiration date
- Card PIN maintained by the system
- The card is used after the start date and before the expiration date
- With valid PIN customer can Withdraw money, Query of account balance and Transfer of funds
- Customer allowed only three attempt to enter correct PIN
- If fails three attempts card has not been reported lost or stolen card
- Weather System can identify the funds available here or not

## **07. Features not to be tested**

A list of Features which is not to be tested:

- Maintenance the server
- The types of the user
- Routine maintenance
- Adding operations
- Opening or closing accounts
- Create, update, and delete records of customer
- Maintenance of the hardware
- Network facilities

## **08. Approach**

All the requirements should to be tested and will find the expected results for each test . Review the test data and test cases to ensure that the unit has been thoroughly verified and the test data and test cases are acceptable to validate proper procedure of the unit. In case the system fail to fulfill the testing requirements it requires a bug report form to be generated. This documentation shall describe in the test case. Test documents and reports will be submitted.

## **09. Item Pass/Fail criteria**

- Would be considered as a passed or successful if it is functioning 95% indeed without any major defects
- The required functions should be working reliably and successfully



- All of the deathtraps should be avoided and checked correctly for the software to pass the testing

## 10. Test Deliverables

The following items will be delivered:

1) System Test Plan
2) Test Cases
3) Daily Test Execution Report
4) Defect Log
5) Exit Report
6) Summary of all Reports
7) Project Metrics

## 11. Remaining test tasks

The following remaining test tasks are listed below:

- Acceptance testing should be conducted by the end user/IV&V.

## 12. Environmental needs

The following table shows the minimum hardware and Software specifications required operating the program in the test environment:

Required hardware and Software	Minimum Requirement Detail
Card Reader	----
Keyboard/display	----
Receipt printer	----
Processor	Intel i3 Core processor, 2.6GHZ
Memory	1 GB
Hard Drive	1GB
Network Interface Card (NIC)	100mbps
Operating System	Windows 7/8/10
Applications	MS Office Application
QA URLs	AIUB Bank Limited Version 1.0– “ http://localhost”
Web Browser	IE 6.0, Google chrome, Firefox

### 13. Responsibilities

- The project team leader responsibility is verifying all the test plan
- The test lead responsibility is to write the test plan
- The test managers write test cases
- The entire project team members will participate in the review of the system
- The developer responsibility is to fix the bugs and the tester responsibility is to detect the bugs not to fix the bugs
- The administration is to verify the test results

### 14. Schedule

Testing is very important part in any kind of projects, So that the testing process needs sufficient time to ensure everything is working proficiently and reliably. We estimate approximately total six months to complete the testing. For the white box testing three months and for the black box testing three months are required.

### 15. Approvals

Name	Designation	Signature	Date
01.Yasin Aman	Project Manager		15.06.2016
02. Foujia Akter	Senior Test Engineer/Lead		12.06.2016
03. Subrina Afrin	Testing Manager		10.06.2016
04. Sarmin Sabrina	Database Analyst		10.06.2016

## 16. Glossary:

<b>MTP</b>	<i>Master Test plan</i>
<b>ABLT</b>	<i>AIUB Bank Limited</i>
<b>QA</b>	<i>Quality Assurance</i>
<b>Test Cases</b>	<i>Test Case is a set of conditions under which a tester will determine whether an application, software system or one of its features is working or not.</i>
<b>Project Metrics</b>	<i>It integrates project quality, cost and time measure the project performance and progress.</i>
<b>Defect Log</b>	<i>a process of finding defects in the application under test or product by testing</i>
<b>ATMs</b>	<i>Automated Teller Machines</i>