SYSTEM ANALYSIS AND DESIGN (II) – ISM 326

ATM Project

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PROJECT ABSTRACT

The ATM System is the project which is used to access their bank accounts in order to make cash withdrawals. Whenever the user need to make cash withdraws, they can enter their PIN number (personal identification number) and it will display the amount to be withdrawn in the form of 50's,100's and 500's. Once their withdrawn was successful, the amount will be debited in their account.

The ATM System is developed in VB.Net and back-end database as Ms-Access. VB.Net is the one of the powerful version of Framework and object oriented programming. Hence we use this software in our project.

The ATM will service one customer at a time. A customer will be required to enter ATM Card number, personal identification number (PIN) – both of which will be sent to the database for validation as part of each transaction. The customer will then be able to perform one or more transactions. Also customer must be able to make a balance inquiry of any account linked to the card.

The ATM will communicate each transaction to the database and obtain verification that it was allowed by the database. In the case of a cash withdrawal, a second message will be sent after the transaction has been physically completed (cash dispensed or envelope accepted). If the database determines that the customer's PIN is invalid, the customer will be required to re-enter the PIN before a transaction can proceed.

If a transaction fails for any reason other than an invalid PIN, the ATM will display an explanation of the problem, and will then ask the customer whether he/she wants to do another transaction.

The ATM will provide the customer with a printed receipt for each successful transaction, showing the date, time, machine location, type of transaction, account(s), amount, and ending and available balance(s) of the affected account ("to" account for transfers).

1. Introduction:

Automated Teller Machine enables the clients of a bank to have access to their account without going to the bank. This is achieved only by development the application using online concepts.

When the product is implemented, the user who uses this product will be able to see all the information and services provided by the ATM, when he enters the necessary option and arguments. The product also provides services like request for cheques, deposit cash and other advanced requirement of the user. The data is stored in the database and is retrieved whenever necessary. The implementation needs ATM machine hardware to operate or similar simulated conditions can also be used to successfully use the developed product.

To develop this ATM system the entire operation has been divided into the following step:

1. verification process
2. language, service and account selection
3. Banking services
4. Transactions
5. Special services

The program is designed in such a way that the user has to card and pin number. Once verified, he is provided a menu and he/she had to enter the option provided in the menu. For example, when the user wants to view the list of payment history than he/she had to enter the option for payment history provided in the main menu. When the option is entered alone with the respective argument, then the payment history is displayed on the screen.

The user also must be given option to browse through the pages like previous page, next page, etc. The user may experience a delay in retrieving or viewing the data, when there are many users logged on to the same bank branch system.

1.2. Problem definition :

The system mainly used by the bank clients. When a client comes to ATM centre to update and delete their account. It reduces the time consumption and lot of paperwork. For any single operation it involves numerous references and updating also takes subsequent changes in other places.

1.3. Evidence of problem definition:

Now- a -days every one very busy in their work. So they feel that the job must be easier so the system is used to reduce their work which is done in the ATM system. Instead of keeping lots of paper into a record or file and it may be missed somewhere so, this system help to keep the record of the customer it also keeps the details of the customer. It is also easy to access.

1.4. Proposed solution:

The system customer transactions, satisfies the requirements of the existing system in full-fledged manner. Through this system, customer can make fast transactions and view the last transactions easily.

1.5. Scope :

- It can be implemented in ATM machine by owner of bank or in charge of branch.
- It is easy to learn the task.

1.6. Objectives:

Our main objective is to speed up the transactions done by customers. No manual transactions needed generally. The second objective is to save the time which is very important now-a-days.

It will include other objectives such as :

- To render accurate services to customer.
- The reduction of fraudulent activities
- To achieve speedy processing of customer data
- To reduce error processing, the guarantee of increase security

2. System Requirements:

2.2. Hardware Requirements:

- Processor :- Intel Pentium 4 or Later or Compatible
- Hard Disk :- 410GB or more
- RAM :- 1GB or more
- Printer :- Any
- Monitor :- SVGA Color Monitor (Touch Screen or Simple)
- Pointing Device :- Touch Pad or Keys

2.3. Software Requirements:

- Operating System :- Microsoft Windows XP or Later or Equivalent
- Front End :- Visual Basic 6.0
- Back End :- Oracle 8i

3. System Analysis :

3.2. Study of current/Existing system:

In the manual system, firstly the bank manager and its staff have to manage information regarding the accounts and transaction of all the customers manually. Doing this manual transaction was really tedious job. Secondly information regarding accounts and transactions of customers were to be maintained. This process is time consuming and it requires a great manual effort.

Disadvantages:

- More time is consumed.
- More hard work to maintain all records.
- Bulk of paper is to be searched for a single search.

3.3. Feasibility study:

3.3.1. Technical feasibility:

The system is being developed in Visual Basic 6.0. It provides comprehensive function to make it user friendly. The data entry and report generation is also made easy. Backup and restore of the database facility are also provided. It also provides easy retrieval of data. The machine configuration also supports this software.

3.3.2. Social feasibility:

As this system is user friendly and flexible some problems will also be solved which employee may be facing when using existing system. So we can say that system is socially feasible.

3.3.3. Economical feasibility:

The cost of converting from manual system to new automatic computerized system is not probably more. For construction of the new system, the rooms and its facilities are available so it does not require any extra resource, only the software requirement is there.

3.3.4. Operation feasibility:

Since the system is being in user friendly way, the new customers within a few time can master it.

3.4. Design of new proposed system (UML):

This system provides paperless maintenance. Initially a cashier or an clerk can be appointed to do all the transaction and update and maintain records. In the new system the customer himself can do all the transaction and the computerized system automatically updates and maintains the records.

Advantages:

- Less effort to complete transaction.
- Less time required.
- No need to maintain the bulk of papers.

4. System design:

4.2. Data dictionary:

Table Name: customer

Column Name	Data Type
cust_id	varchar2
cust_name	varchar2
Dob	date
contact_no	number
cust_add	varchar2
a_c_no	varchar2
a_c_type	varchar2
Bal	number
card_no	number
card_pin	number
b_branch_id	varchar2

Table Name: bank

Column Name	Data Type
b_branch_id	varchar2
b_branch_name	varchar2
b_branch_add	varchar2
b_admin_id	varchar2

Table Name: b_admin

Column Name	Data Type
b_admin_id	varchar2
b_admin_name	varchar2
b_admin_pin	number
b_admin_rights	varchar2

Table Name: atm

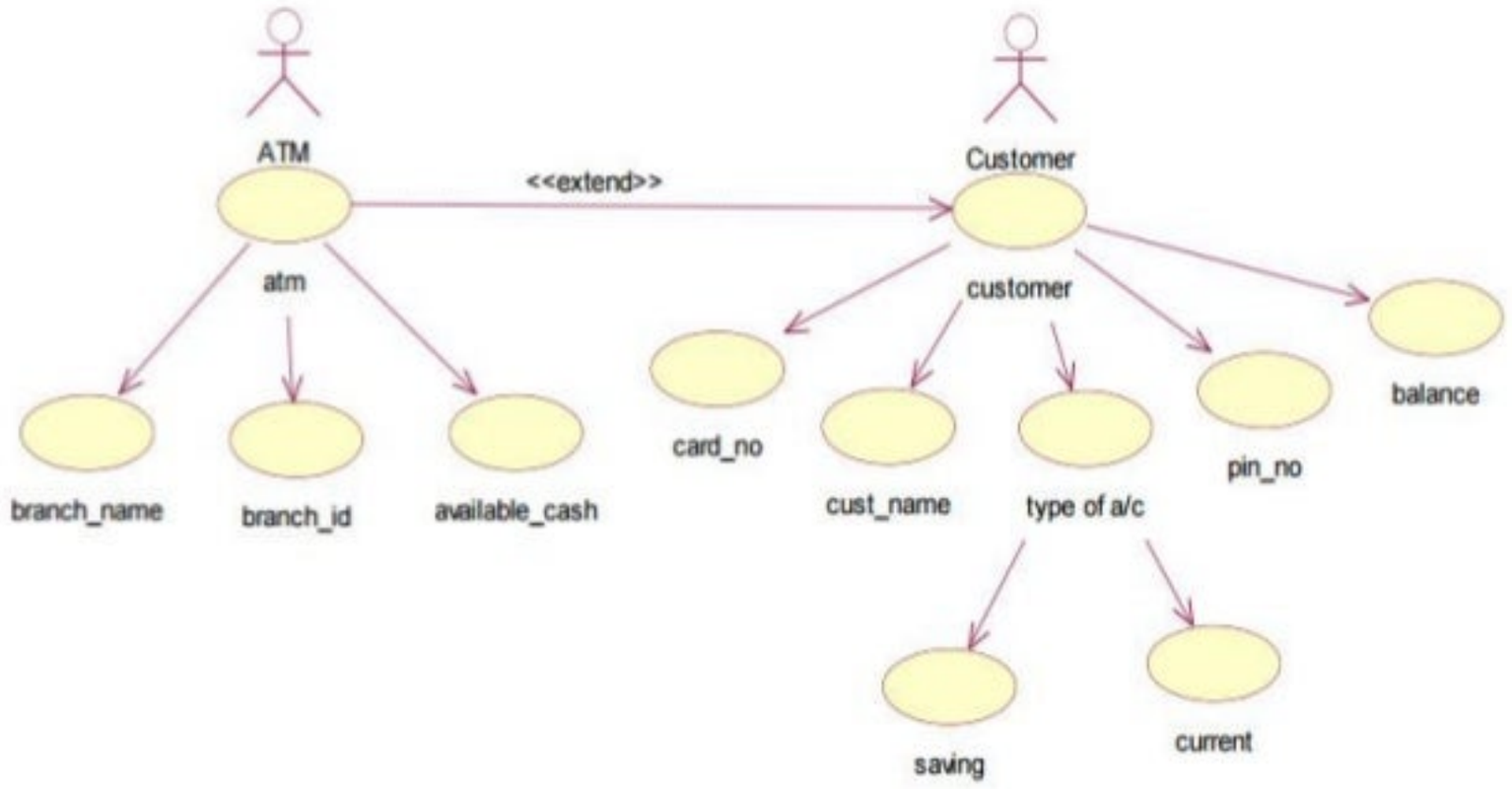
Column Name	Data Type
a_branch_id	varchar2
a_branch_name	varchar2
a_branch_add	varchar2
a_admin_id	varchar2
available_cash	number
b_branch_id	varchar2

Table Name: a_atm

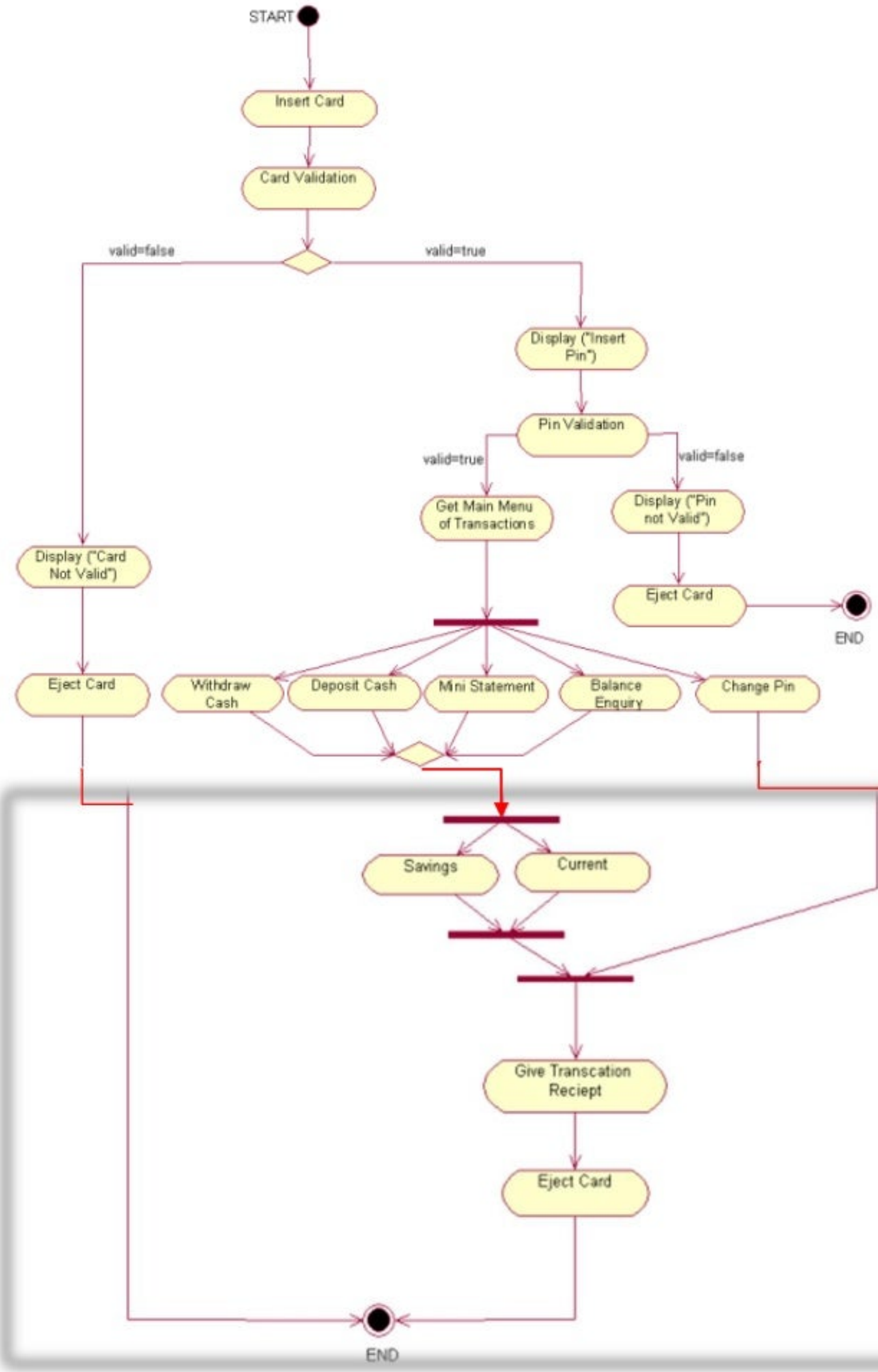
Column Name	Data Type
a_admin_id	varchar2
a_admin_name	varchar2
a_admin_pin	number
a_admin_rights	varchar2
a_branch_id	varchar2

4.3. Diagram design(UML):

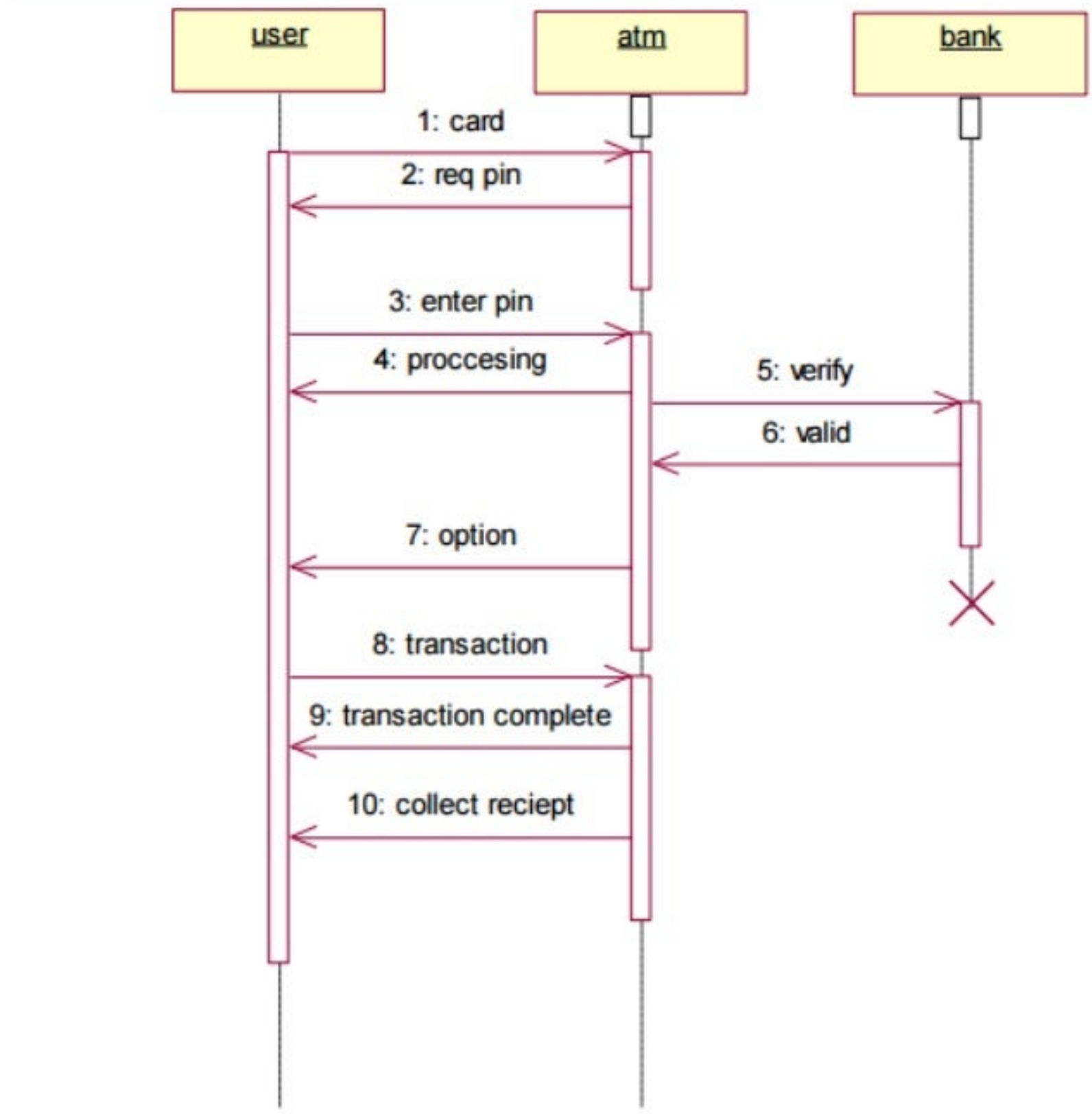
4.3.1. Use case diagram:



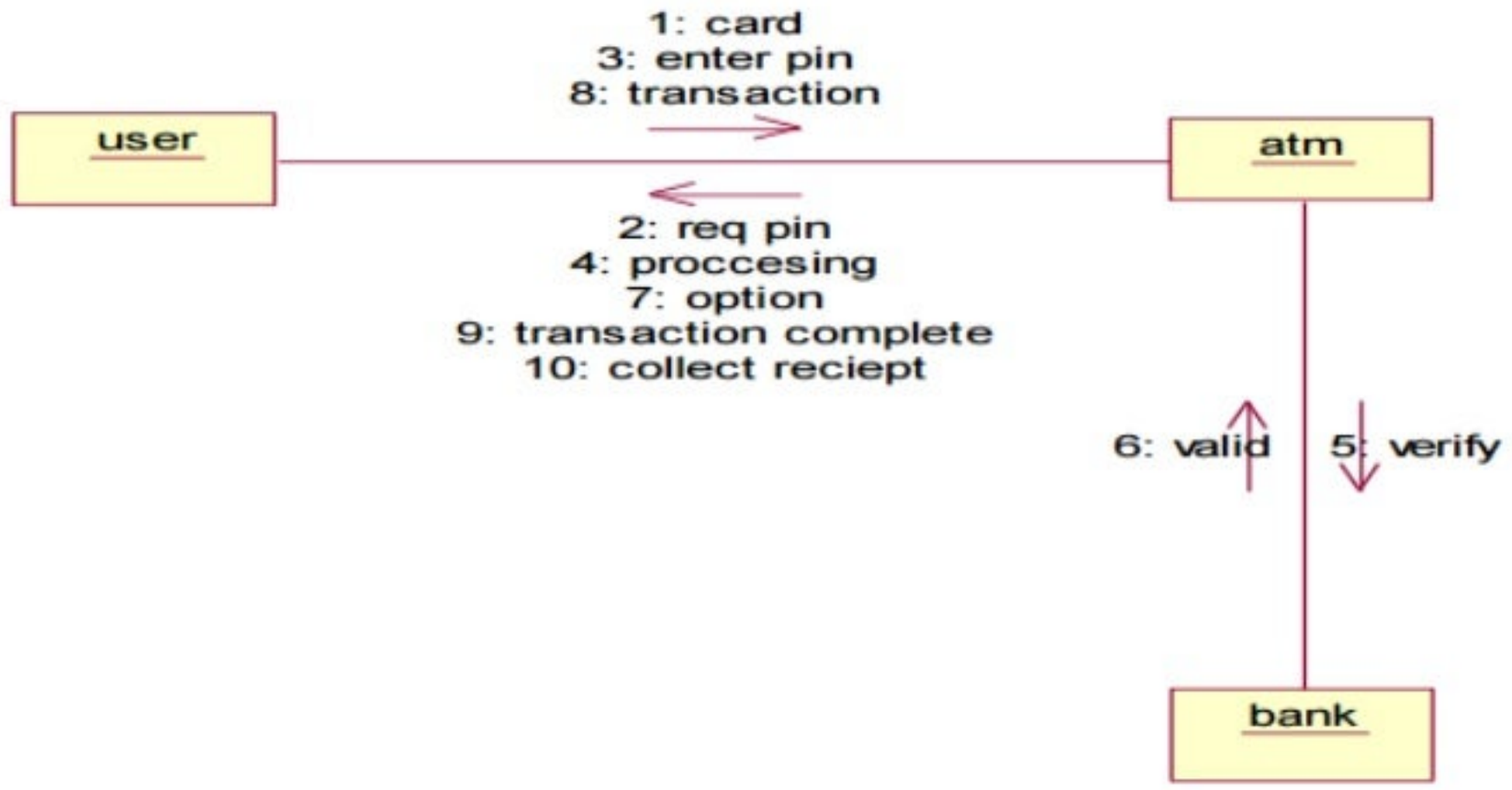
4.3.2. Activity diagram:



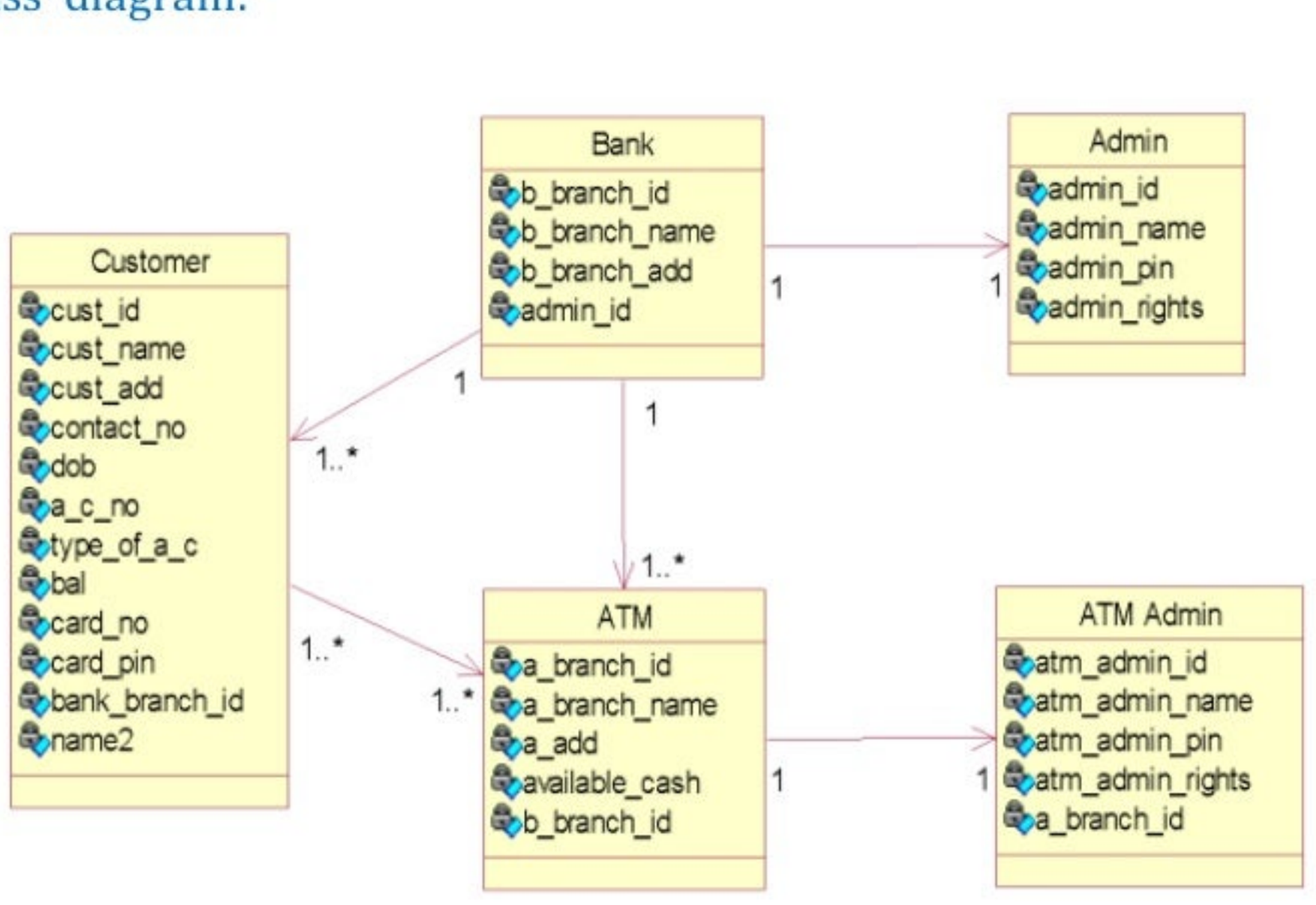
4.3.3. Sequence diagram:



4.3.4. Collaboration diagram:

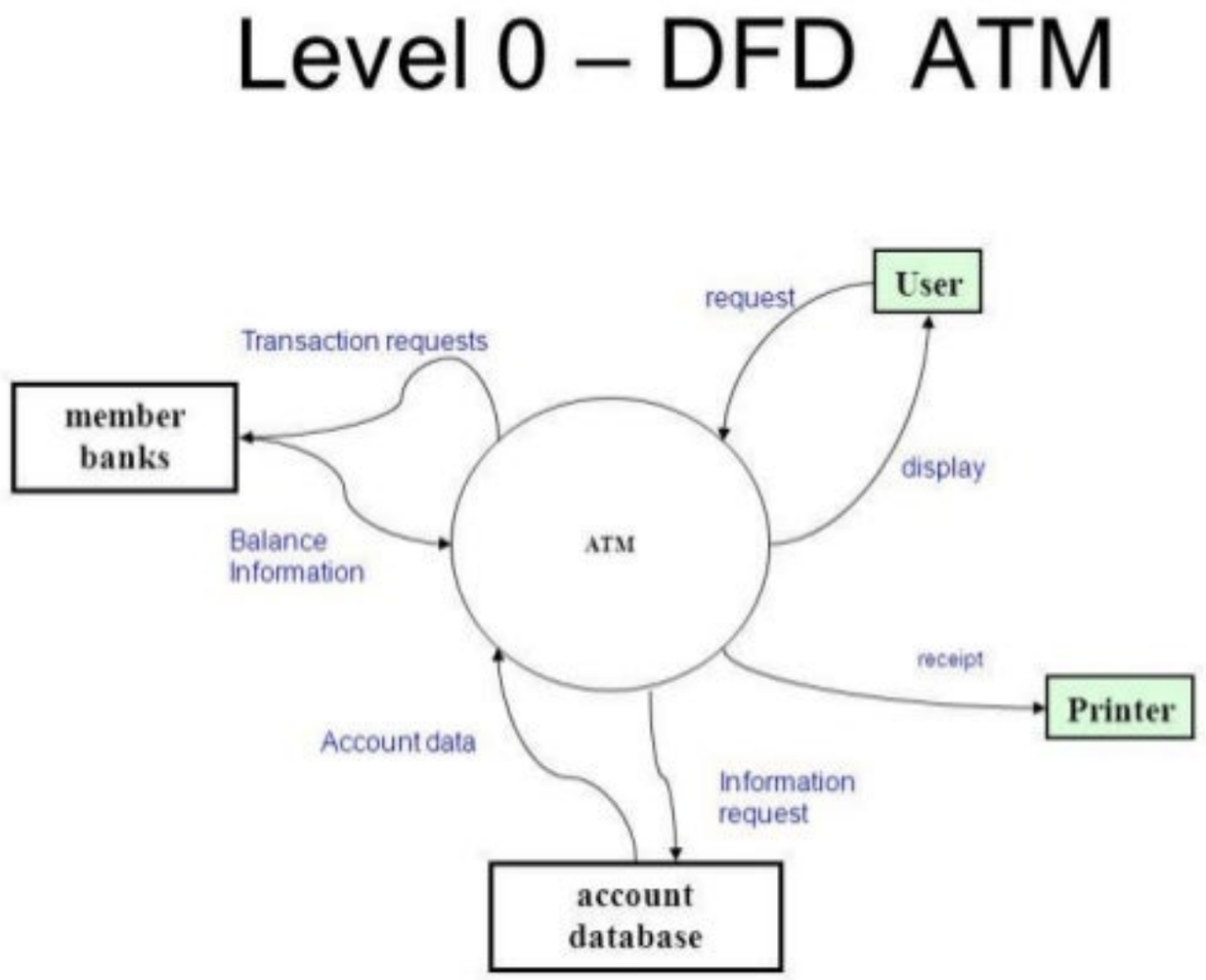


4.3.5. Class diagram:

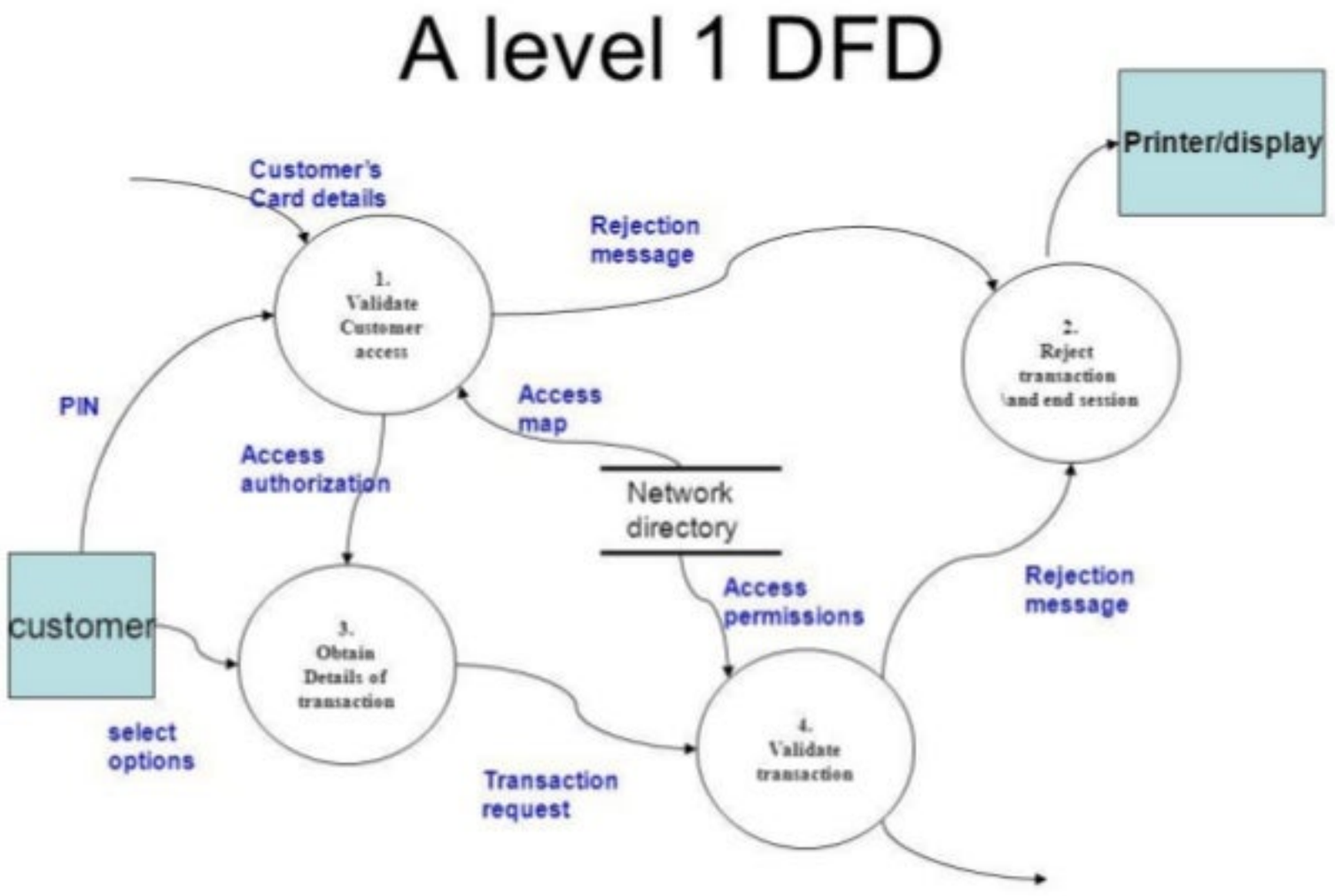


4.4. Diagram design(DFD):

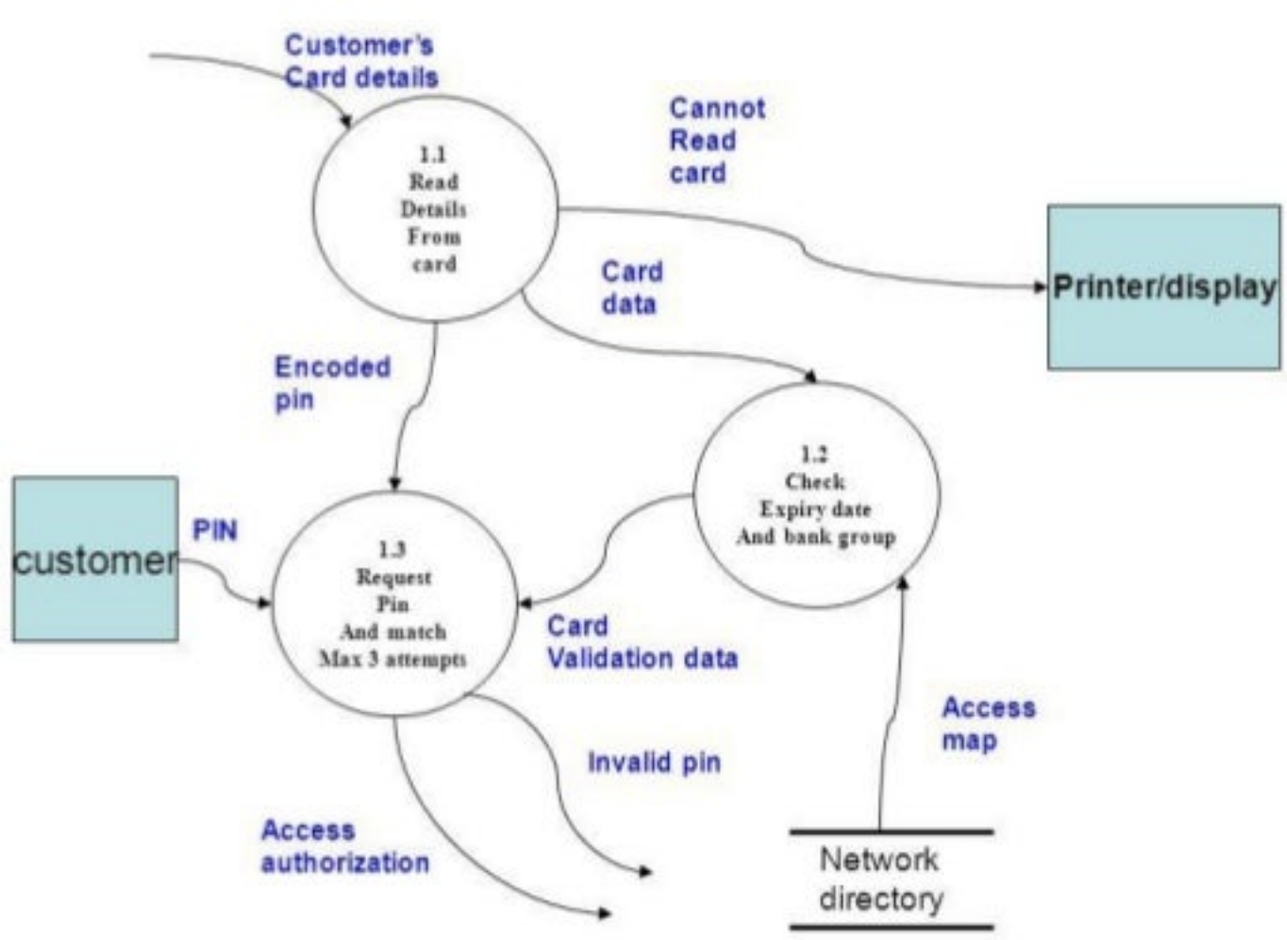
4.4.1. Level 0:



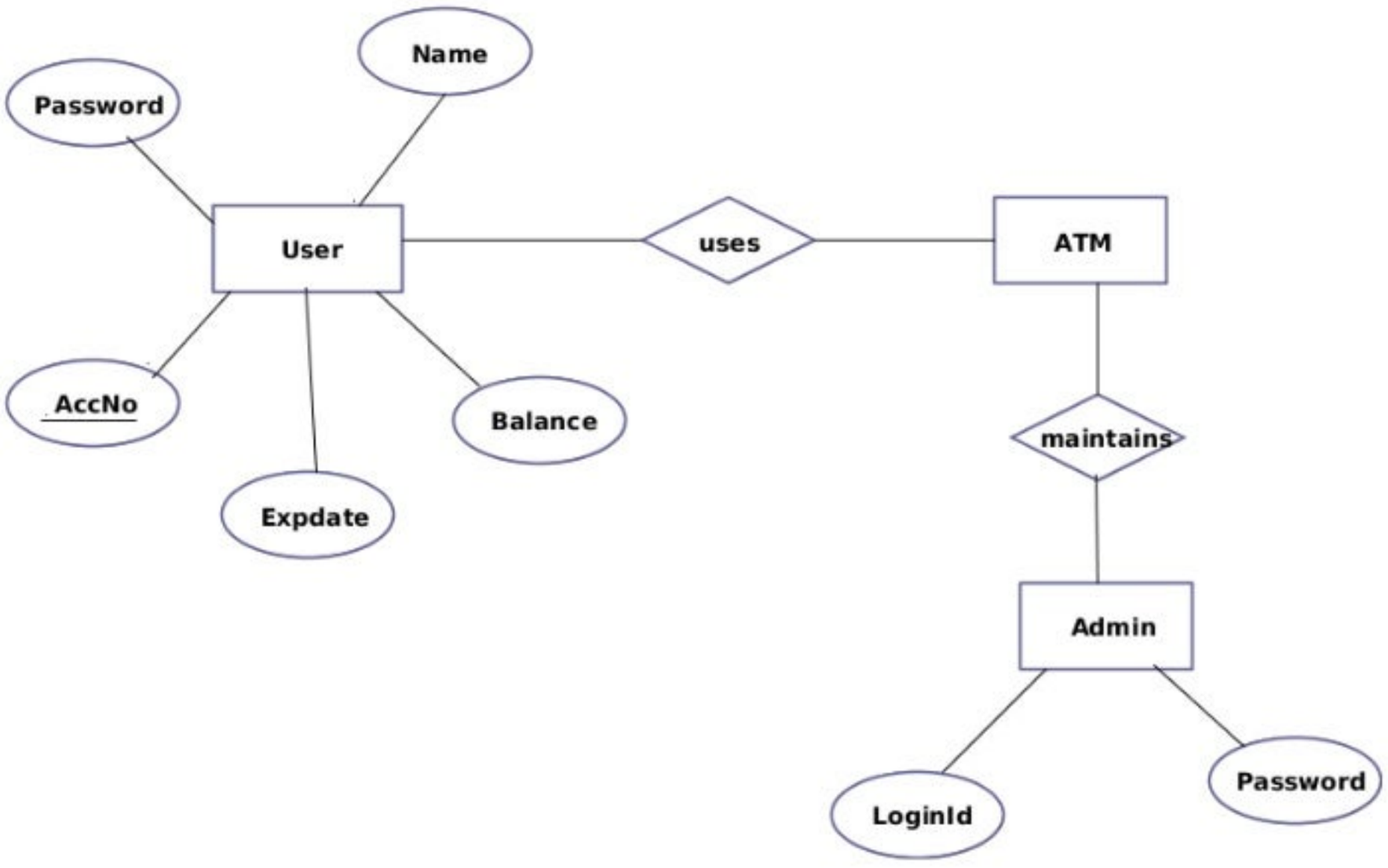
4.4.2. Level 1:



4.4.3. Level 2:

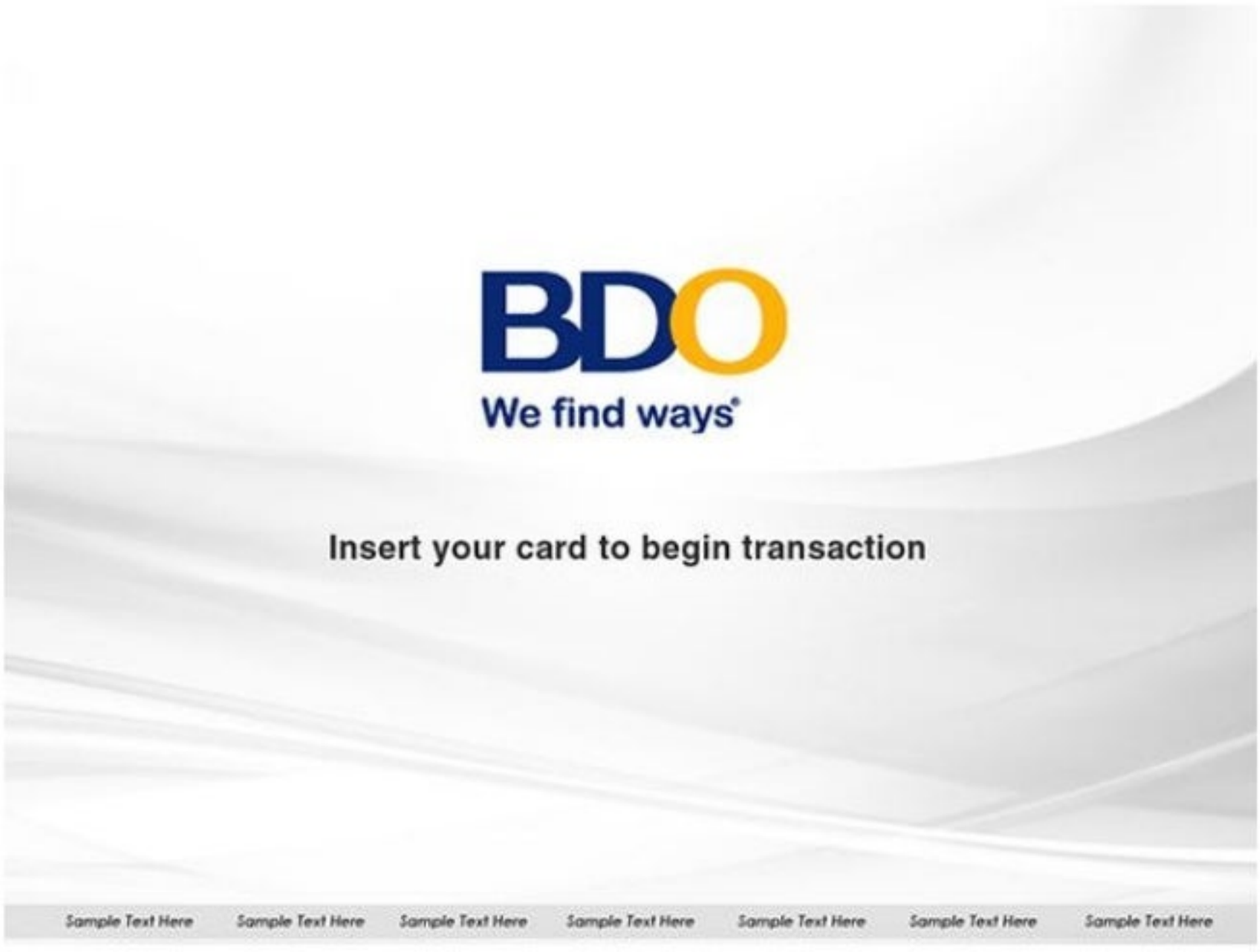


4.5. Diagram design(ERD):



5. Graphical User Interface:

5.2. Insert ATM card :



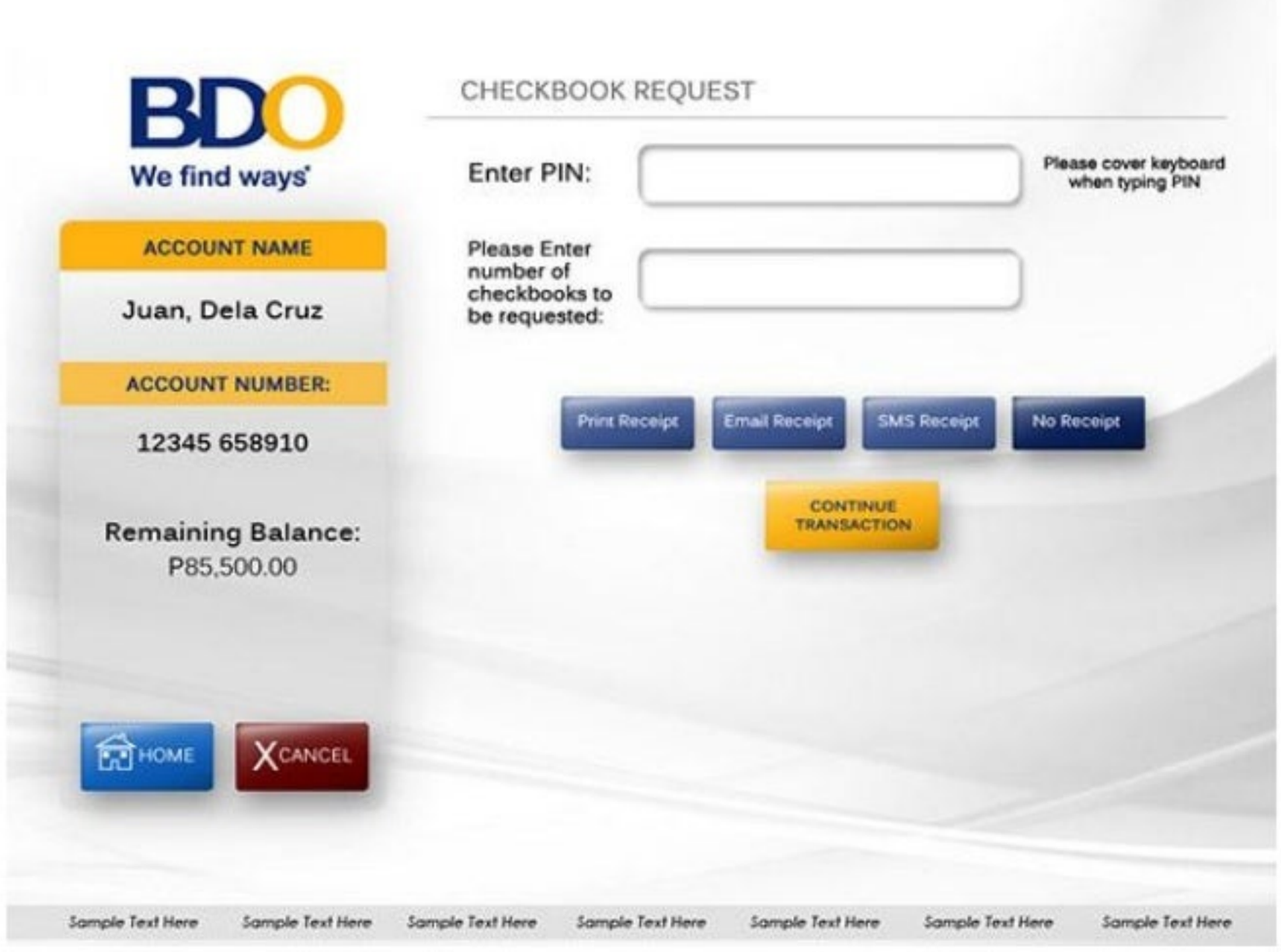
5.3. Main menu:

5.4. Withdraw :

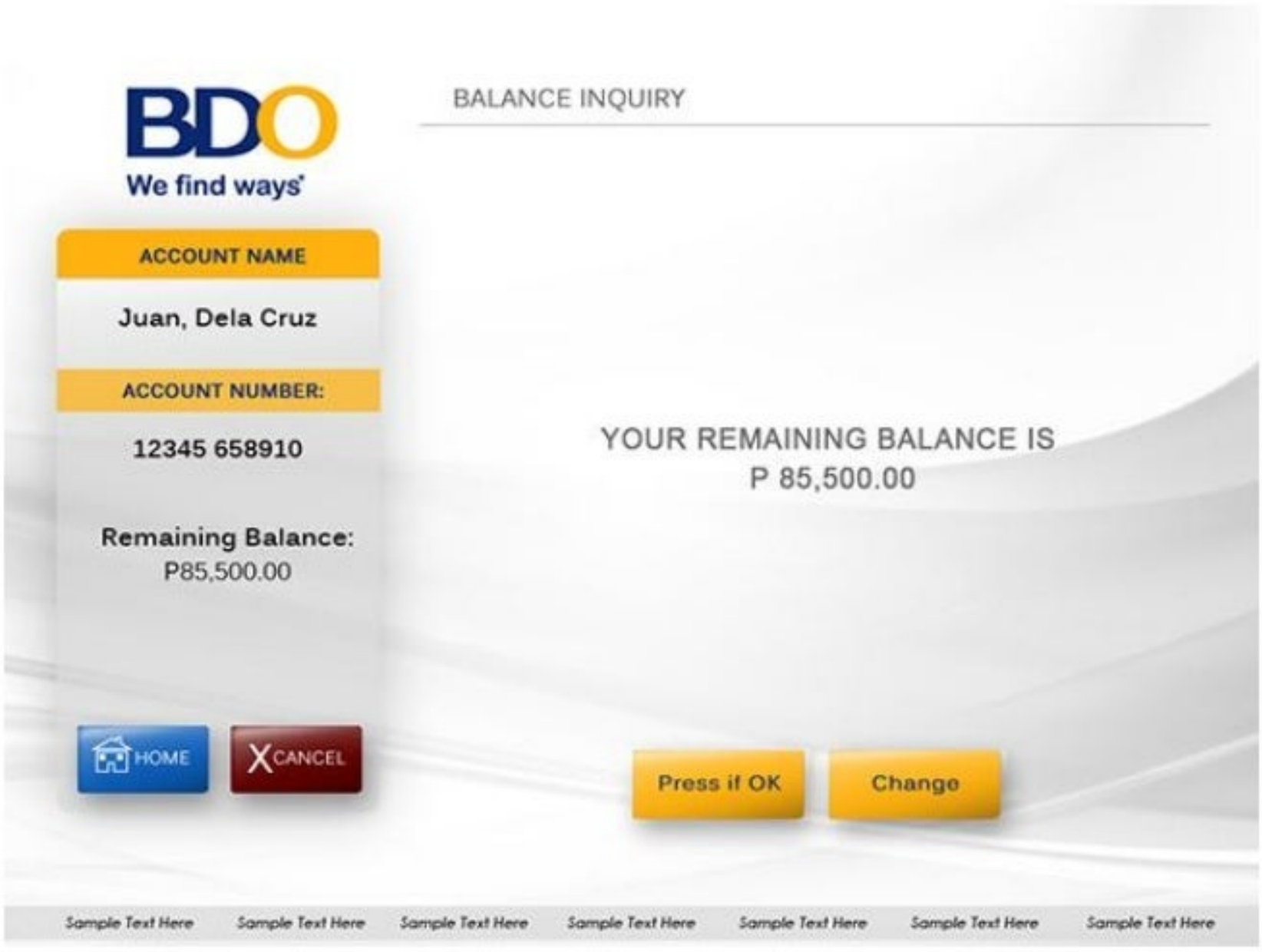
BDO
We find ways
Savings
Current
Checking
ACCOUNT NAME
Juan, Dela Cruz
ACCOUNT NUMBER:
12345 658910
Remaining Balance:
P85,500.00
WITHDRAW > SAVINGS
Enter PIN:
Please Cover keyboard when typing PIN
Amount:
P 500
P 1,000
P 2,000
P4,000
P6,000
P 8,000
P10,000
P 15,000
Enter Other Amount
HOME
CANCEL
Print Receipt
No Receipt
CONTINUE TRANSACTION
Sample Text Here
BDO
We find ways
Savings
Current
Checking
ACCOUNT NAME
Juan, Dela Cruz
ACCOUNT NUMBER:
12345 658910
Remaining Balance:
P85,500.00
WITHDRAW > SAVINGS
Enter PIN:
* * * *
Amount:
P 500
P 1,000
P 2,000
P4,000
P6,000
P 8,000
P10,000
P 15,000
Enter Other Amount
HOME
CANCEL
Print Receipt
No Receipt
CONTINUE TRANSACTION
Sample Text Here

5.5. Enter password:

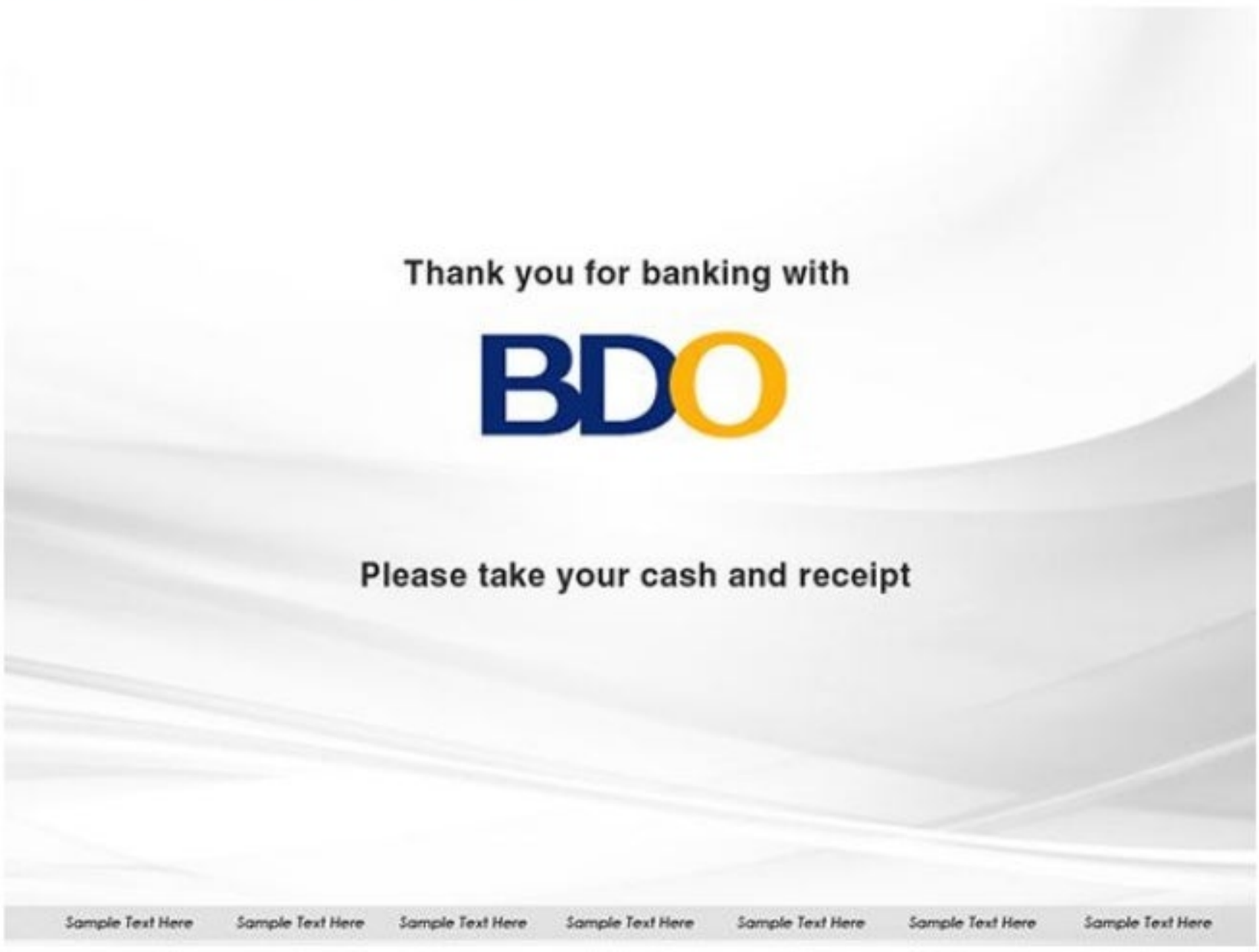
5.6. Checkbook request :



5.7. Balance inquiry :



5.8. Receive cash or deposit money :



6. Requirements for ATM:

This part contains functional and non-functional requirements for ATM. All requirements concerning with teller machine are prefixed with ATM.

6.2. Functional Requirements:

ATM-FR-X	ATM functional requirement
ATM-FR-1	The card reader determines the account number from entered card
ATM-FR-2	ATM is in the idle state when there is no operation
ATM-FR-3	The user is prompted to enter a PIN after a card is entered.
ATM-FR-4	A menu is displayed to the user with following options: Withdraw, Deposit, Pay bill, Account update and Exit.
ATM-FR-5	The cash Dispenser has the ability to dispense cash.
ATM-FR-6	A transaction record can be printed upon demand.
ATM-FR-7	The card is ejected when the session is completed.
ATM-FR-8	The envelope feeder accepts envelopes
ATM-FR-9	The envelope feeder is aware when an envelope has been inserted.
ATM-FR-10	The printer determines whether there is sufficient paper and ink.
ATM-FR-11	The ATM default to idle state.
ATM-FR-12	The cash dispenser is aware of the cash amount available.
ATM-FR-13	The user is prompted to make between 1 and 3 bill payments.
ATM-FR-14	The keypad accepts input from the user.
ATM-FR-15	The ATM is aware of state of the envelope drawer. (Which can be either empty or full).
ATM-FR-16	The ATM can withhold a bank card
ATM-FR-17	Transactions can be canceled at any prompt by the user pressing the CANCEL button.

6.3. Non-Functional Requirements:

ATM-NFR-X	ATM non-functional requirements
ATM-NFR-1	The ATM unit consists of a display, a card reader, a cash dispenser, an envelope drawer, an envelope slot, a keypad and a printer.
ATM-NFR-2	The keypad is a set of buttons that includes the following: 10 buttons labeled with numbers 0 to 9, an OKAY button, a CLEAR button, CANCEL button, and dynamic buttons that perform different actions
ATM-NFR-3	A PIN must be entered within 20 seconds.
ATM-NFR-4	The user must enter PIN correctly within three attempts.
ATM-NFR-5	ATM suspends further access using a particular card if the associated PIN is entered incorrectly 3 times in succession.
ATM-NFR-6	ATM must be secure
ATM-NFR-7	ATM can be shut down and restarted.
ATM-NFR-8	The envelope drawer can be open and refilled wit envelopes
ATM-NFR-9	The envelope feeder can be opened so any envelopes that have been deposited can be removed
ATM-NFR-10	The cash dispenser can be opened and refilled with cash
ATM-NFR-11	The printer can be opened and refilled with paper.

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