MAASC (Multiple Account Access using Single ATM Card)

Nair Vinu Uthaman, Pratiksha Shetty, Rashmi, Mr.Balapradeep K N

Abstract—**Present day, ATM system provides the user the facility of accessing any ATM card in any of the ATM system. This enables the user to access card in any of the ATM system without much of searching for user specific card ATM system. The problem with existing system is that the user must carry all the user's ATM cards to access through the user's multiple accounts and also user has to remember so many passwords. The proposed scheme of MAASC (Multiple Account Access using Single ATM Card) provides the individual, the comfort of accessing users multiple account of different banks using a single card. Also, it provides the user one level higher convenience than the existing system. In this paper, we have used two modules namely Admin module and User module. Admin module is responsible for entering the user details, user bank details, ATM card details. It is also responsible for clubbing of all the accounts of an individual users and updating the database frequently. User module is the interactive module through which the user can log into the system and perform the transactions of the user's choice. Though the proposed system provides the user a level higher convenience, the system it lags in the security issues which has to be overcome in the future work. The proposed system is a user friendly, efficient and convenient system.**

Keywords—**MAASC (Multiple Account Access using Single ATM Card), MAASC card, Money Transfer, DTH Recharge, Net Recharge, Mobile Recharge.**

Manuscript received May, 2014.

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I. INTRODUCTION

An Automated Teller Machine (ATM) also known as an automated banking machine (ABM) cash machine, cash point, cash line or hole in the wall is an electronic telecommunications device that enables the clients of a financial institution to perform financial transactions without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number. Authentication is provided by the customer entering a Personal Identification Number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals, debit card cash advances, and check their account balances as well as purchase pre-paid mobile phone credit [1]-[2].

A. LITERATURE SURVEY

In the late 1930's, Luther George Simjian started building an earlier and not-so-successful version of an ATM. He did register related patents. He initially came up with the idea of creating a "hole-in-the-wall machine." It would allow customers to make financial transactions, without entering the bank.

John Shepherd-Barron had an idea in the 1960's for a 24/7 cash dispenser. He was managing director of De La Rue Instruments. De La Rue today manufactures cash dispensers. There is a De La Rue cash dispenser in 1 out of every 5 ATM machines built. If you want to say that Shepherd-Barron invented the ATM, then the world's first ATM was installed outside North London. As a Development engineer with Smiths Industries Ltd, James Good fellow was given a project. It was to develop an automatic cash dispenser in 1965. Chubb Lock & Safe Co. was to provide the secure physical housing.

John D. White installed the first ATM at Rockville Center, LI for the then Chemical Bank in August 1973. His design was patented on May 9, 1973 for the Docutel Corporation and was filed on July 29, 1970. The machine was a "Credit Card Automatic Currency Dispenser".Finally in 1967 that the first ATM that dispensed paper currency round the clock, was unveiled [1]-[4].

In the existing systems, the user can access any of the user's cards irrespective of the bank to which it

ISSN: 2278 – 7798

belongs in any of the ATM system convenient to the user. This reduces the burden of the user by avoiding the need to search for that particular bank's ATM system from which the user would want to perform the various transactions. But the drawback of the present systems is that the user has to carry the particular card from which the user wants to perform the transactions [5]. The main aim of this paper is to highlight the objective of the proposed system, MAASC (Multiple Account Access using Single ATM Card) which is to overcome the above mentioned drawback and provide the user a second level of convenience.In the proposed system, the user can access all the various accounts of the user in different banks using a single card. Therefore, the user need not carry all the cards and also need not remember all the different passwords of different cards [5]-[8].
The rest of the paper is organized as follows. In the second section, the methods required for the proposed system is been explained. The third section consists of the results which are obtained by comparing the proposed system (MAASC) and the existing system. Finally, the last section consists of the discussions interpreted from the results.

B. EXISTING SYSTEM

In the existing system, when the user enters the ATM system the userhas to insert the respective card of the user's choice into the ATM system's card slot.The next immediate step the user has to do is enter the pin for that particular card. (Authentication purpose).
There is a universal rule for ATM system, if the user enters the incorrect password the user will be provided with only three attempts to renter the pin. In case the user fails to enter the right pin, that particular card will get blocked and for later use the user will have to consult the respective bank executives.
Once the PIN is entered and is verified, the user has to select particular transactions to make as per as the user's needs.If the user selects the Balance Enquiry option, then it will just display the current amount in that particular account of user and the system also provides a printed slip of the details.If the user selects Deposit option, then the amount requested is been added to that particular account of the user through which the user is performing the transactions.If the user selects the Cash Withdrawal option, then it will withdraw the requested amount of cash by the user from the respective account if available, else it will display there is no sufficient balance message or if the amount to be entered is lesser than Rs.100 then it will display the message please enter a valid amount. a) If the amount entered is more than or equal to 100, then the amount requested is successfully withdrawn from the user's account and the cash is dispensed from the cash dispenser slot.b) If the amount is lesser than Rs.100, then the user will be notified with the following message on the screen.If the user selects Mini Statement option, it displays the last ten transactions of that particular account of the user.If the user selects Fast Cash, then the amounts are withdrawn in multiples of 100.If the user selects Change PIN option, the user is asking the respective bank to change the password [8]-[10].

II. PROPOSED SYSTEM

A. ARCHITECTURAL DESIGN

Based on the architectural design of the MAASC system shown in the figure the proposed system is designed.

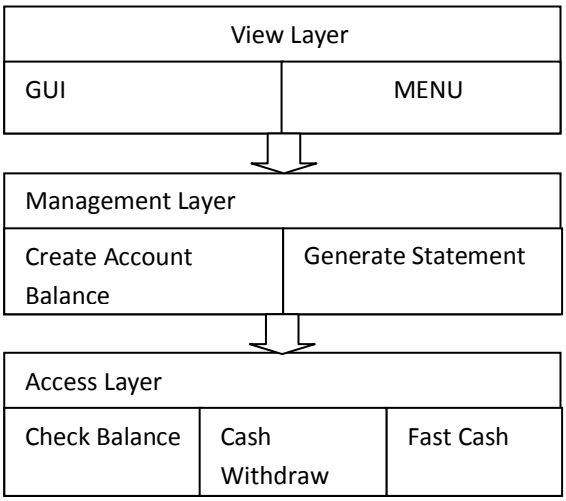

Fig. 1. Architectural Design of MAASC system

The architectural design consist of three layers namely view layer, management layer and access layer as shown in fig.1. The view layer is visible to the users which consist of the GUI (Graphical User Interface) which is used in user interface and menu which is used by the user for selecting the options. The management layer is not visible to the user it is used to generate the account details and also to notify the error messages. The access layer is visible to the user and it is the layer which provides the user options for transactions [10].

B. SYSTEM MODULES

The proposed model consists of the two modules namely Admin Module and User Module. The Admin Module is used to register the user details and the account details of the user. The User module is used for the user interactions.
The initial process forin the proposed system is the MAASC organization (Admin Module) creates an individual's account along with the individual's personal details and club the various bank accounts

ISSN: 2278 – 7798

of an individual and provide the respective MAASC card for the user. Home.cs form consists of two options i.e. User.cs where the user's details like name, address, phone number, and so are entered. And another option is Account.cs which is used to generate the account number for the particular user by selecting the particular bank where the first six numbers are randomly generated (according to the bank code fixed), the branch name of the particular account along with the balance is entered[7]-[10].

C. IMPLEMENTATION

Here as soon as the process starts from the Main.cs form which is then linked to Card.cs form where the user enters the valid Pin and selects ENTER button. The next form available to the user is SelectBank.cs where only the banks which that particular user has accounted in are displayed and the user has to select one particular bank among those. The next form available to the user is SelectTrans.cs where the number of transactions can be selected by the user. The arrow marks above displays the link of the one form to another.

The forms in the two modules (admin module and user module) are linked to the respective form is done by the below given three line code.

```
MAASC.Forms. xyz frm = new xyz ();
This. Show ();
frm.Hide ();
```

Where MAASC is the namespace which is declared in the Data Manager program (a program used to connect the Visual Studio 2010 to the database), Forms is a folder under which all the forms

The user logs in the user's account through personal computer's using the MAASC card PIN and account of the user's choice. Initially the flow begins from Main.cs form followed by Card.cs form where the user selects SYSTEM button which is used for system login and then the flow is moved to a form named Security.cs. Security.cs form is used to provide one level higher security as the account can be hacked by anyone easily; therefore by asking question like first school of the user this is achieved. Then the form is linked to SystemBank.cs where the user has to select a particular bank and then linked to the SystemTrans.cs form. In this form along with BalEnq.cs, MiniStatement.cs we have three additional features i.e. NetRecharge.cs, DTHRecharge.cs, MobileRecharge.cs.In our proposed system the amount after the deduction is visible to the user.

The proposed system MAASC(Multiple Account Access using Single ATM Card) functions similar to the existing ATM system except that an particular user's all the bank accounts are clubbed together and the an organization that keeps track of these accounts provides the user a single card through which the user can access any of the user's account.In proposed system, when the user enters the system the user will initially see the following screen. The next step is that user swipes the MAASC card in the MAASC system.Once the card is swiped, the user has to enter the PIN.

As soon as the user enters a valid PIN, the user will then have to make a choice of the bank from which account the user would like to perform the transactions. A set of banks in which the user has accounts will be displayed on the screen as depicted below [9]-[10].

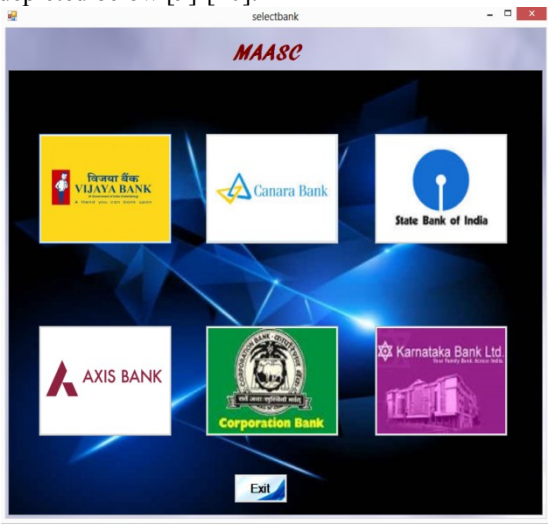

Fig. 2. Select Bank screen

Once the user selects the bank from which the user would perform the transactions then the list of transaction options is displayed from which the user further makes choice according to the user's requirement. The proposed system has all the transaction option as that of the existing system i.e. Cash Withdrawal, Deposit, Fast Cash, Balance Enquiry, and Mini Statement. All these transaction except the Cash Withdrawal works similar to that of the existing system. In addition to these there are other transaction options like Money Transfer and also in Cash Withdrawal consists of Coin Withdrawal, Change Withdrawal .There also another feature added to the proposed system that is once the user enters the PIN, if the user opts to perform transactions in the ATM system then the user is supposed to select ENTER button else if the userwants to login through the user's system for performing transactions like Net Recharge, DTH Recharge, Mobile Recharge the user has to select the SYSTEM button.If the user selects the Money Transfer transaction, then the user will come across the following screen.

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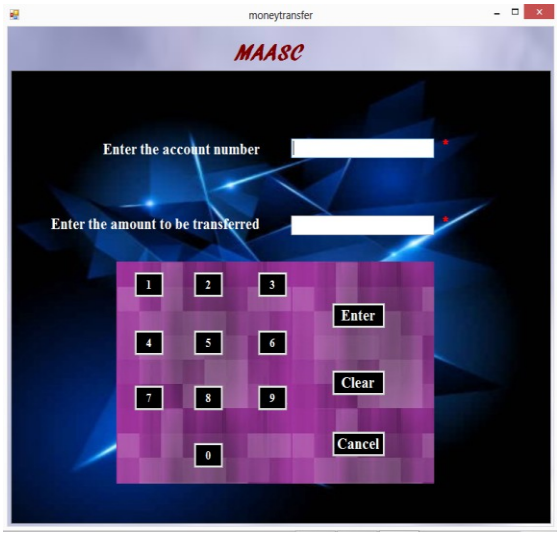

Fig. 3. Money Transfer screen

IV. PERFORMANCE ANALYSIS

I.*Comparison of the existing ATM system with the proposed system (MAASC)*

Serial Number	Features/ Characteristics	MAASC(Proposed System)	ATM(Existing System)
1	Money Transfer	Available	Not available
2	DTH, Net, Mobile recharge	Available	Not available
3	Bit coin	Available	Not available
4	Cash Withdrawal, Deposit, Balance Enquiry, Mini Statement	Available	Available
5	Convenience	One level higher than the existing system	Available but not as much as proposed system
6	Efficiency	High	High
7	Number of cards for multiple accounts	Single	Multiple

Compared to existing system, the proposed system MAASC (Multiple Account Access using Single ATM Card) provides one level of higher convenience. i.e.

- The user need not carry various bank's card all time for transactions. Instead a single card would be replaced by multiple card of an individual.(i.e. MAASC card)
- Similarly the user need not remember the different passwords provided by the different banks, a single password would allow the user to access any of the user's account irrespective of particular banks.
- In addition to the existing system features (transactions), proposed system has introduced new features like Money Transfer with the help of which the user need not go to banks wait in long never-ending queues just to transfer some amount to the user's friend or family. Amount could be transferred through ATM itself.
- In our proposed system we have also introduced coin withdrawal, where an individual can withdraw coins up to a limit of Rs.10 with the coins of the user's choice (i.e. either 1 rupee coin or 2 rupee or 5 rupee).
- Net/DTH / Mobile Recharge could be done in the existing system also but the advantage of the proposed system is that once the user does any of the above mentioned transactions from the user's PC by logging in using the card number and PIN the deduced amount is displayed to the user immediately.

V. CONCLUSIONS

MAASC (Multiple Account Access using Single ATM Card) system has been successfully executed. The user can perform various transactions from the user's various accounts using the single MAASC card. Here neither the user need to remember the various PIN's of the different accounts nor the user has to carry the different cards for the respective accounts. The proposed system has the new features like money transfer which allows the user to transfer the required amount to the user's friend/family in need without going to the banks, waiting in the long never ending queues and prevent wasting a lot of time. The user can also withdraw coins to the maximum amount of Rs.20 in multiples of 1 rupee, 2 rupee and 5 rupee. The proposed system also provides the features like NET/DTH/Mobile Recharge with the remaining balance i.e. updated after the transaction is also available. The proposed system can be made more efficient and flawless by providing a level higher security. This can be done by adding the thumb impression feature to the proposed MAASC system. Also the changes similar to the coins can be withdrawn in multiples of Rs.10, Rs.20 and Rs.50.With all these features, the MAASC system will be one of the efficient, flawless and user friendly application in the coming days.

ISSN: 2278 – 7798

BIBILOGRAPHY

[1] Adams, A. S. and Thieben, K. A. (1991) , Automatic teller machines and the older population. Applied Ergonomics, 22, 85 -90.

[2] ATMMachine.com

[3] Mary Bellis. The ATM of John Sheppard Baron, about.com

[4] Miller, A.W, 2006 [Online], who invented the ATM machine? Automated Teller History, Available at http://www.atmmachine.com/atm-inventor.html [Accessed 20/11/2006].

[5] Burford, B. C. and Barber, C. (1993), A user-centered evaluation of a simulated adaptive autoteller, in S. A. Roberston (ed.) Contemporary Ergonomics, London, UK: Taylor and Francis Ltd, 117-122.

[6] Hone, K. S., Graham, R., Maguire, M. C., Baber, C. and Johnson, G. I. (1998), Speech technology for automatic teller machines: an investigation of user attitude and performance. Ergonomics, 41, 962-981.

[7] Rogers, W. A. and Fisk, A. D. (1997), ATM design and training issues. Ergonomics in Design, January 1997, pp. 4 - 9; http://hfes.org/Publications/TOC/EID-93-7.html

[8] Rugimbana, R. and Iversen P. 1994, Perceived attributes of ATMs and their marketing implications. International Journal of Bank Marketing, 12, 30 - 35.

[9] The RadioHead, (2005) [Online], The ATM Experience, Available at http:// theradiohead. blogspot.com/2005/02 / atm-experience.html [Accessed 25 /11 / 2006].

[10] Bennett, S. McRobb, S. Farmer, R. (1999) Object-Oriented Systems Analysis and Design, McGraw-Hill.

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ISSN: 2278 – 7798