Secure ATM Transaction and Card Payments with GSM Service

Mugdha Fadnavis and Manish Karandikar

Embedded Creations Nagpur, India

Abstract

Considering todays world of hackers and internet crime, it is the need of hour to make all transactions secure and safe for every coustemer who is using netbanking and ATM service.A mobile can be used as digital signature for cross checking the validity of person(customer). This device has become the integralpart of every human being and everyone is always close to his mobile handset. This habit of carring mobile always with you can be exploited for crossverification of customer before executing money transaction from ATM or at any merchandise for card payments.

Keywords: ATM MoneyTransaction, Customer authentication, GSM Service.

1. Introduction
India has a large network of banks. It includes the central bank i.e. the Reserve Bank of India and various commercial banks like State Bank of India, Kotak Mahindra bank and many more. To carry out routine transactions like cash withdrawal a lot of problems were faced by the customers. Some of them include the transactions were to be performed in the working days and that too in the working hours. This caused great inconvenience to the people especially to the working class. Therefore the smart security system is required for the secure transaction in every circumstance. Such system must be robust to every threat in banking transaction.

Almost every customer dealing with banking transaction performs following type of electronic financial transactions.

- Cash withdrawal at ATM
- Card payment at merchandise
- Fund transfer or RTGS/NEFT type of net banking transactions.

Our system takes care of first two type of transactions and guarantees easy and much improved performance against thefts and manipulations in these transactions.

a. The cash withdrawal at ATM

The 24 X 7 money withdrawal system was started by" Automated Teller Machine" popularly known as ATM. Mr. .Harish Murthy ,chairman of India Switch Company pvt. Ltd. Installed India's first ATM. Thus people started enjoying the benefits of this system which included its 24 hrs facility, its user friendly advantage and most importantly its efficiency,. but every discovery brings with itself its positive as well as negative sides. But many cases of withdrawal with bogus ATM debit cards, forcing person to withdraw money forcibly, or hacking account and initiating transaction have been found and recorded with police or banks. Our developed and suggested system protects bank customer against all such type of fraudulent transactions on his/her account with fake debit/credit card.

b. Bogus Credit Cards transactions at merchandise

This is second type of threat to bank customer. In most of the transactions on credit or debit cards at merchandise, the signature verification is rarely done by the merchant. Hence any person can use stolen card at least once till it is blocked by the actual owner of the card. These type of crimes are more in number than the first type of crime mentioned in point (a). our developed and suggested system also provides relief and compels merchant to protect the interest of bank customer.

2. OPERATION

The complete system of Secured ATM transactions and Card Payments proposed in this paper is almost full proof and easy to use. This system should be implemented only when customer fills a form and accepts terms and conditions of the systems. This facility can also be provided as a charged service where banks can charge annual service charges from the customer.

The service has two different modules for two different types of transactions as mentioned above.

2.a. The cash withdrawal at ATM

The system flow chart is given below in Fig. 1.
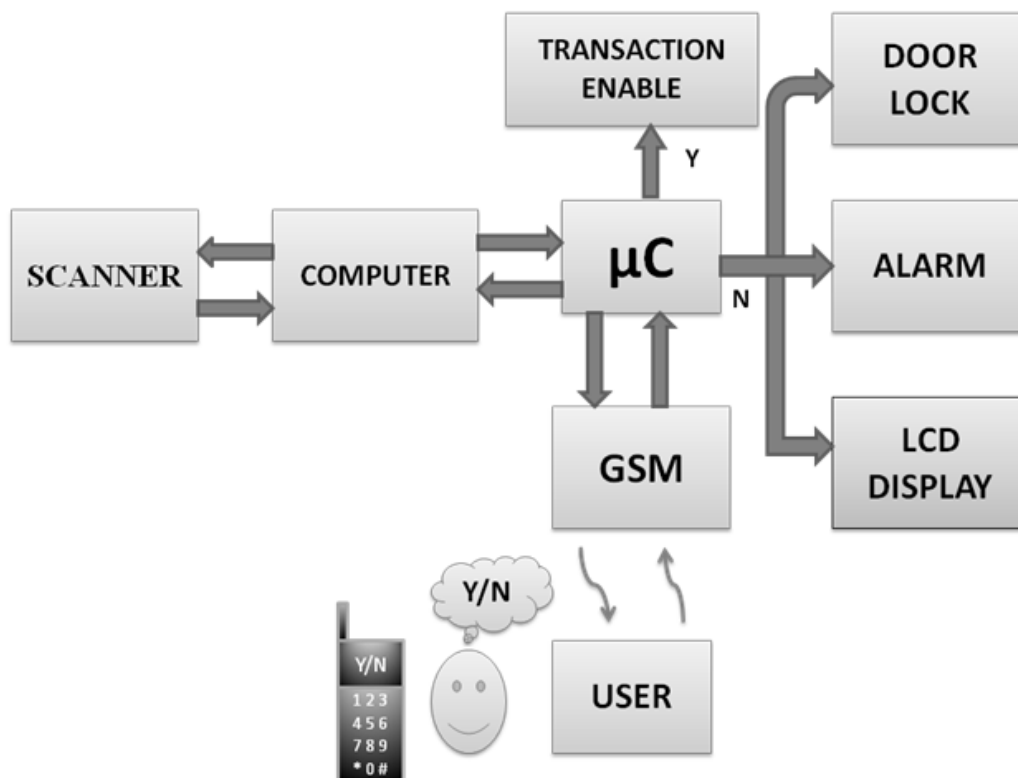
Fig. 1. System Flow Chart.

The system operates in following simple steps.

- Customer enters his/her card in ATM and confirms password.
- The customer initiates a transaction and enters amount to be withdrawn.
- The system generates an SMS and sends message to the registered mobile.
- The contents in message are: "Requested Withdrawal of Rs XXXX from ZZZ Road ATM. Do you want to proceed?"
- Now system waits for the confirmation from the same registered mobile.
- If system receives "YES" from the registered mobile, the transaction is executed.
- If system receives "NO" or doesn't receive any message in 20 seconds. The transaction is aborted.
- At the same time the alarm can be triggered so that security guard and check and nab the unauthorized person.
- We can even lock the door of ATM center which will be opened by the password of security personal only.

2. b. Bogus Credit Cards transactions at merchandise
If any person tries to swap the card at merchandise, the proposed system works as follows.

- Person (customer) swaps the card in tailor machine.
- The amount is entered by merchant.
- The system sends SMS to the registered number of customer and waits for reply.
- If reply is "yes" then transaction is carried forward.
- The tailor machine prints two copies of bill one for customer another for merchant.
- If reply is "No" then a buzzer is turned on and the transaction is aborted.
- The block diagram is same as above application except that the lock is removed from output side and card scanner is swiping machine instead of ATM.

Conclusion

The complete project is tried and tested with a dummy database and GSM system. The system works with expected efficiency and provides complete protection against fraud transactions. This system will provide more safety to every transaction of bank customer. This system will reduce the fraud related to transactions.

REFERENCES

[1] Timothy Thiele "Thermal Electric Motor Protection" [Online]. Available: http://electrical.about.com/od/wiringcircuitry/a/thermalprotectionformotors.htm

[2] Farhad Yazdi "Generalized Theory Of Electrical Machines" Available at : http://farhadyazdi.com/en/?tag=krons-primitive-machine

[3] Wikipedia "Reconfigurable Computing" Available at: http://en.wikipedia.org/wiki/Reconfigurable_computing

[4] T.J. Todman, G.A. Constantinides, S.J.E. Wilton, O. Mencer, W. Luk and P.Y.K. Cheung"Reconfigurable computing: architectures and design methods" Available   at: http://enhanceedu.iiit.ac.in/wiki/images/Reconfigurable_computing-_architectures_and_design_methods.pdf.