Advanced Security Mechanism at ATM Centres

K. Sowmya Sree[1], Ravindran Vishal[2], Andavolu Prakash[3], Vinutha Gogineni[4]

Student, Department of Computer Science and Engineering, St. Martin's Engineering College, Hyderabad, India[1, 2]

HOD, Department of Computer Science and Engineering, St. Martin's Engineering College, Hyderabad, India[3]

Assistant Professor, Dept of Computer Science and Engineering, St. Martin's Engineering College, Hyderabad, India[4]

Abstract: Invention of ATM machines is all the way beneficial to man-kind. However, people are facing few security issues like physical security and robberies. Few security measures are already in practice like security guards at the centers, reverse pin, CC cameras and few mobile applications; these are reliable up to certain extent but cannot avoid the problems on the whole. In this research we present an idea which can provide advanced security at ATM centers, involving Scanning the card for validation, using automatic door access card reader (Yetong model no-M2000) to permit the person into the room, and limiting the entries which are detected. Use of vibrators in ATM machine to sense abnormal actions, sharing the entry card details between card reader and ATM machine to access the doors for the exit of same person, on scanning the card after transaction.

Keywords: ATM, Card-reader, camera, Bull horn.

I. INTRODUCTION

The most common problem faced by people in bank ATM's is security. In this paper we are going to introduce an advance security method which can solve the problem generally faced at bank ATM centers. This method is designed for both cash withdrawal and deposit machines. It is applicable in case of a single ATM machine or two. Advanced authentication tools are used in this process, which are expected to solve almost all the security issues faced by people and there will be no chance of theft. If there is any abnormal action done by the person, alarm siren is activated and the doors are locked immediately.

A. Security issues faced by people

➔ Robberies
➔ Threatening
➔ Misusage of card
➔ Vandalism etc

II. METHOD PROPOSAL

Initially a person is exposed to a camera for the face detection, once it is successful he is can proceed with the next step.

➔ Authentication of his card is done in this step which is performed using Shenzhen Yetong Technology Co. Ltd (model no- M2000). If the person is going to deposit the amount in the ATM then a number pad is provided in which the person should enter the account number and access is provided.

➔ Access is limited to two persons on a card.

➔ The bull horn alarm is used to respond to any kind abnormal actions.

A. Method Model
ATM machine door-access card-reader which is a product of Shenzhen Yetong Technology Co. Ltd (model no-M2000) is used in the research. This is designed to read all kinds of bank cards; it need not be connected as it operates independently. It will give the output signal for opening the door smoothly and it is provided with an additional feature of internal time match to unlock the door automatically.

B. Camera
A wide angled Camera which is used for identification of the person is placed inside the transparent door in such a way that it can detect anyone who is in front of the door and stores the image in the database. As soon as the image is stored in the database the signal for the access to the door is sent to the card-reader.

C. Card Reader
In the next step there are two possibilities. The person may have come to withdrawal the cash or he might have come to deposit the cash i.e

1) Cash withdrawal: In this case the person needs to authenticate the card and enter inside for a safe transaction. As soon as the card reader gets the signal from the camera it accepts the card, and verifies it.

2) Cash deposit: If the depositor is carrying a card then he can proceed with card authentication. In all the cases it is not compulsory for a depositor to carry his card. In that case he can enter the account number in the number pad provided and it gets stored in the database.

The output in both the cases will be access of door to allow the customer inside.

Fig. 1 Card reader

D. Bull Horn Alarm

ATM machine includes bull horn alarm with which it can respond to any kind of abnormal actions.

The Bull Horn ATM Alarm is activated in following cases:

➔ If the machine is moved or tilted.
➔ If the ATM is cut using a saw, axe etc, the alarm is activated.
➔ If the machine is scrutinized.

Mild jerks will not activate the alarm. The alarm, once activated will produce an ear popping 120 decibel siren until turned off or reset by keyed switch. In case if it is not turned off siren will be on till 10 hours.

Fig.2 Bull horn alarm

E. Steps to Follow

➔ First the customer who is entering the ATM has to stand infront of the door so that the camera detects his face.

➔ After the detection is successful customer can proceed on with the authentication process.

➔ Once it is done he is permitted to enter inside and process his transaction.

➔ After the transaction, he should undergo the process of card authentication or enter account number in the number pad (cash deposit case) provided inside the ATM.

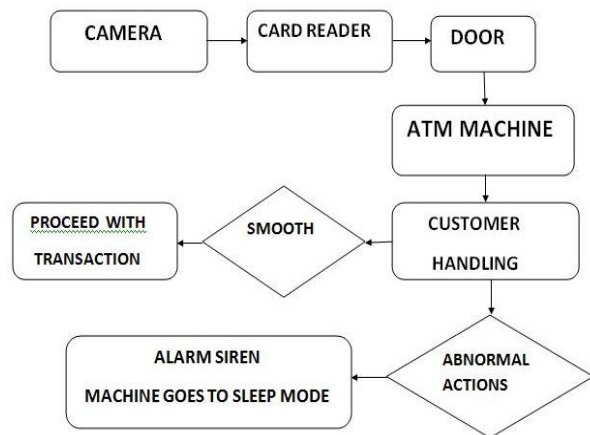➔ A customer can experience a safe and secured process.

Fig. 3 Pictorial representation of the sequence

III. CONCLUSION

The updating technology is helping people in all terms but the main point of discussion is security. Secured technology is preferred and accepted by everyone. Through this paper we provide a secured idea which solves many real time problems. Invalid user will be restricted from entering itself. This idea will reduce human efforts i.e security guard near the ATM centers.

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BIOGRAPHIES

K. Sowmya Sree, I am a Computer Science student from St. Martin's Engineering College, affiliated to JNTU Hyderabad. My areas of interest are Web Designing, Photoshop and Blogging. I run a blog in which i write about the updates of Prime Ministers all over the world. I own a website www.pmupdates.com

Ravindran Vishal, I am a Student at St. Martin's Engineering College From the department of CSE I am good in the áreas of PHP, Android, Cross Platform Mobile applications, HTML5, CSS, Bootstrap, PhotoShop. I run a blog named Gizzmo School, based on technology gadget and gaming. I hold 2 Microsoft certifications on database fundamentals, querying transact sql on azure databases.

A. Prakash, Currently working as Head of the Department, CSE, St. Martin's Engineering College. He completed his M.Tech in Software Engineering from JNTUH, He had an experience of more than 12 years in teaching and his areas of interest are Education Technologies, Computer Networks, Cryptography and Security.

Mrs. Vinutha Gogineni Post Graduated in Computer Science & Engineering (M. Tech) from JNTUH, Hyderabad in 2012 and Graduated in Computer Science & Technology (B. Tech) from JNTUH Hyderabad in 2007. She is working as an Assistant Professor in Department of Computer Science & Engineering in St. Martin's Engineering College, R.R Dist, Telangana, and Hyderabad. She has 9+ years of Teaching Experience. Her Research Interests Include Computer Networks, Network Security, Big Data, Cloud Computing.