



AN UBIQUITOUS FRAMEWORK FOR ELECTRONIC DD WITH ADVANCED ENCRYPTION STANDARD TECHNIQUES

Atchaya N

Department of Electronics and Communication Engineering,
Arasu Engineering College,
Anna University,
Kumbakonam, Thanjavur,
Tamilnadu,
India.

Deevika T

Department of Electronics and Communication Engineering,
Arasu Engineering College,
Anna University,
Kumbakonam, Thanjavur,
Tamilnadu,
India

Hemalakshmi R

Department of Electronics and Communication Engineering,
Arasu Engineering College,
Anna University,
Kumbakonam, Thanjavur,
Tamilnadu,
India.

Tamilmozhi K

Department of Electronics and Communication Engineering,
Arasu Engineering College,
Anna University,
Kumbakonam, Thanjavur,
Tamilnadu,
India

Abstract— At present automation intelligent has entered its presence in every field all over the world. This is based on intelligent automation for issuing demand draft in an automated way. At present situation DD was taken manually without the use of man power and it is highly impossible to take DD. It will be taken only on bank working hours, so that to overcome this kind of difficulties and idea is introduced to take DD automatically. This system eliminates the drawbacks of the existing system set-up. This modified set-up is placed in bank branches similar to that of ATM. In our proposed system we use RFID reader and GSM as communication device which was operated using Arduino Uno. Here RFID tag and NFC card can act as credit/debit card when an user swipe the card in an ATM the reader detects & forwarded the card information to the microcontroller, the controller process that information and create electronic DD & for secure transaction encryption method is used, then the amount will be transferred to the account directly and then the amount credit/debit information will be forwarded to both people via SMS.

Keywords— ATM machine, RFID reader card, RFID Tag, GSM, Electronic Demand draft, Encryption

I. INTRODUCTION

The main purpose of the proposed system is mainly focusing on the new features that can be implemented as a possible alternative method to the traditional method. DD is also known as sight draft, as they are payable when presented by sight to the bank. It is generally used for effecting transfer of money based on traditional methods, in order to perform customers will need to queue up the line and wait for some minutes. It is a negotiable instrument similar to bill of exchange bank issues a demand draft to client(drawer) directing another bank(drawee). It does not bear the signature of the customer like ordinary cheque. Nowadays, ATM performs various financial activities such as Cash, Withdrawal, and Transaction. It enables customers of financial institutions to perform financial transactions at any time and without the need for direct interaction with bank staffs.

Cheques and demand draft are increasingly losing their place as instrument that are used for payments as, most individuals are today making payments through the RTGS, NEFT, IMPS mechanism. But still today many applications for jobs, examinations, Administrations, Admissions, Services, High amount purchases require demand draft rather than cheques. It cannot be dishonored the main idea of this concept is to generate the electronic DD in an ATM machine by using this method customer need not to wait for hours in bank and to avoid time consumption.



OBJECTIVES:

- To develop an existing system to generate a DD in an ATM machine, where customers can take the DD through the ATM.
- To improvise the traditional method to generate the DD by using the ATM machine.
- For making DD the encryption technique is used for secure transaction.
- The main objective of the proposed system is time saving and for improving anytime/anywhere banking.
- For authentication of DD we are using digital proxy signature

II. EXISTING SYSTEM

A. A MODEL PLATFORM FOR EARLY DEMAND DRAFT:

In Existing System, We Face the Following Problems are, in current DD making process customer have to visit the bank in a working hour and fills the details in the form and wait for some authorization. Without manpower it is highly impossible to take DD. It can be taken only in bank working hour and cannot be taken in night or off days. At many banks are offering online demand draft but, in this process customer have to wait for some time and it delivered by the courier. The person making the order is known as the drawer and the person specified in the order is called the drawee. The party who creates the draft is called the maker and the party who is order to pay is called the drawee. Here we use algorithm Secure Electronic Transaction or SET is a system which ensures security and integrity of electronic transactions done using credit cards in a scenario. SET is not some system that enables payment but it is a security protocol applied on those payments. It uses different encryption and hashing techniques to secure payments over internet done through credit cards .SET protocol was supported in development by major organizations like Visa, Mastercard, Microsoft which provided its Secure Transaction Technology (STT) and Netscape which provided technology of Secure Socket Layer (SSL).

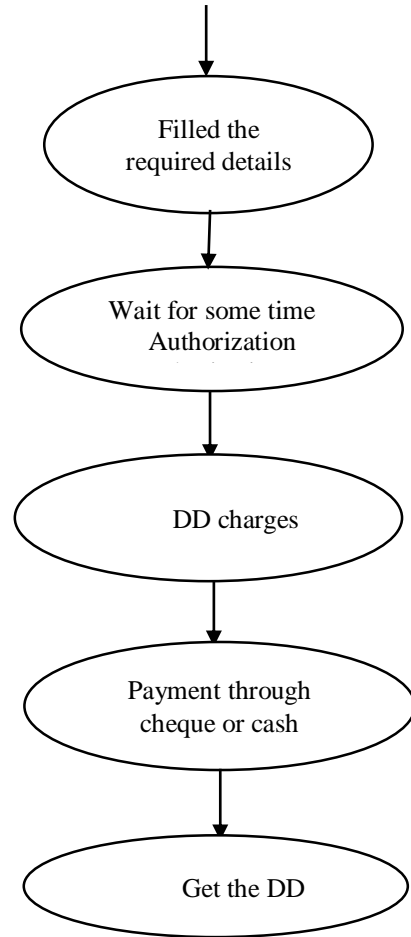
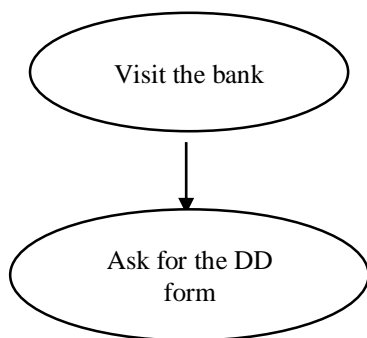


Figure (a) existing system

B. STEPS TO MAKE DEMAND DRAFT:

1. Fill the form:

Visit any bank and ask for DD application form or fill the form online

2. Form details:

You need to fill up the details like the mode in which you want to pay through cash or from your account using cheque in whose favor the DD is to be made (beneficiary), the amount, the place where DD will be encased, cheque Number, your bank account number, your signature.

3. DD charges:

The bank will provide the demand draft once you submit the form along with the money and the demand draft charges. The charges vary from bank to bank.

4. Pan card details:



If amount exceed more than rupees 50000 and you are paying my cheque then pan card details needs to the submitted.

Disadvantages of the existing system:

- Time consumption for manual DD process is more
- Not reliable
- Anyone who gets hands on DD can get the money

It can be taken only in bank working hours

III. PROPOSED SYSTEM

In order to overcome the drawbacks of the existing system, we designed new idea for the proposed system. Customer becomes user friendly. Anytime and anywhere customer can take DD using ATM machine. Customer can get the DD at a spot within a few minutes. During bank holidays, and in night customer can get DD at the spot. It is better service than online DD. Within few seconds they have to feed the required details in the PC instead of writing in a form. This is then generated and the sum of amount which has been inserted will be added in the softcopy. Then they have to verify once and have to give print. Thus the Demand Draft will be generated in few seconds instead of standing for hours. Customer first login to the system by swapping his ATM card then system will ask for PIN as costumer enters valid PIN system shows various options on screen now user selects DD Making then system ask for some detail, as user enters all required details system adds some details with the detail given by the costumer and displays on screen and ask for verification, user when verifies all detail then printing of DD and transaction slip starts and dispense from exit slot. User now has DD transaction slip

Advantage of the Proposed System:

- Time saving
- . Customer need not to wait for bank formalities.
- DD misuse is to be high security and high efficiency

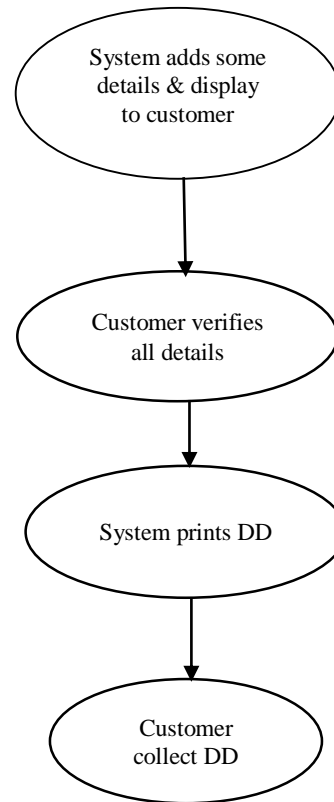
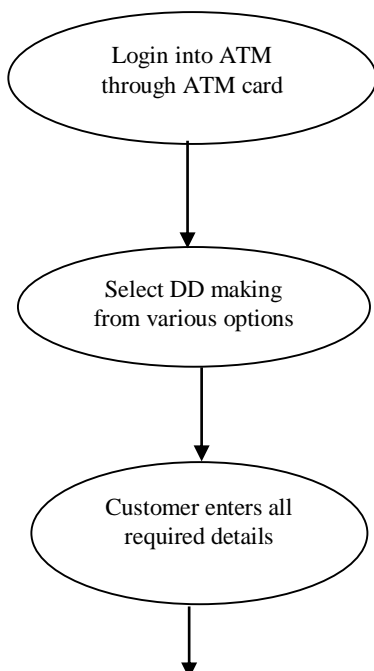


Figure (b) Proposed system

By using this Algorithm steps customer can generate DD in an ATM machine at any time/anywhere banking

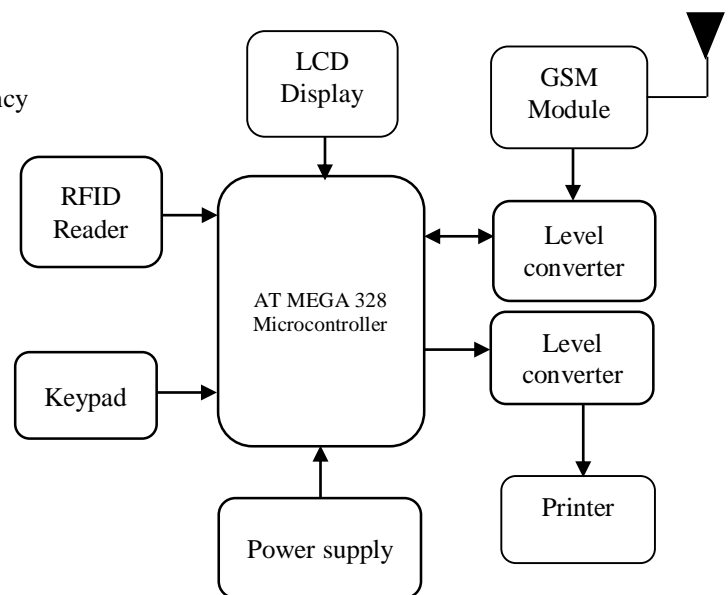


Figure (c) block diagram of ATM Section



In our concept we use NFC card as ATM card and if user shows the NFC card it reads the individual value (magnetic strip) from that unique card. That card information is verified with the data base of Arduino Uno program. Once that card information was accepted, our system asks the user to enter four-digit pin using keypad. If the pin was matched with the card input, we programmed our controller it tends to ask two types of options for the user

- press '1' to check balance
- press '2' to DD generation
- press '3' to DD update

If user select option-1:

His/her account balance will be shown on the display

If user select option-2:

Our system asks to enter account number (mobile number) followed by amount. If the balance is available in our account it asks four-digit pin. Once the pin was accepted, the amount will be forwarded to the client account directly. We got acknowledgement through printout and SMS for both peoples (card owner and client).

If user select option-3:

If customer receive DD and OPT. He inserted card in an ATM and need to enter his own password and enter OTP to receive DD.

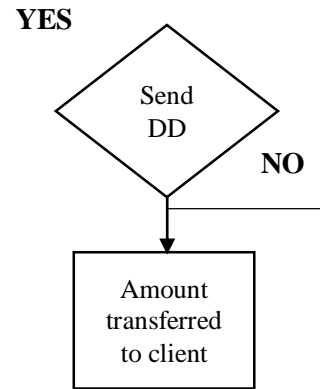
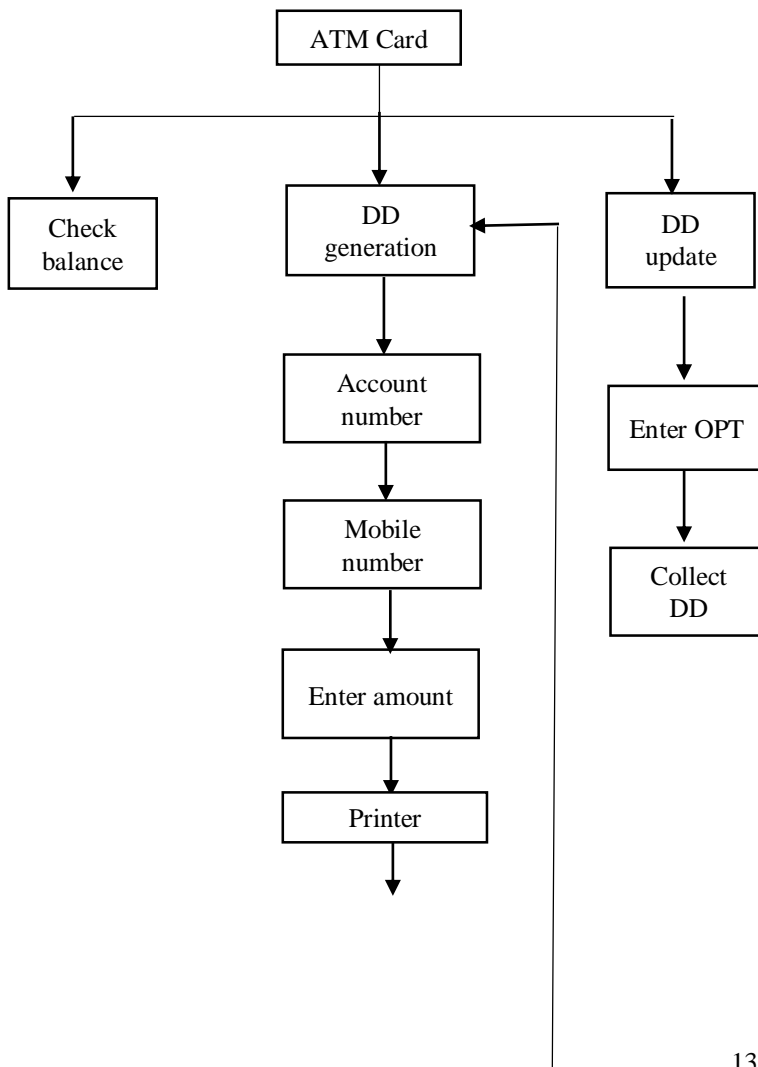


Figure (d) flowchart for working

RFID READER:

RFID tag transmit about an item through radio waves to the antennas/reader combination. The energy activities the chip, which modulates energy with the desired information, and then transmits a signal back towards the antenna reader. In the active RFID system, the reader sends signal to the tag using an antenna. The tag receives this information and resend this information along with the information in its memory. The reader receives the signal and transmits to the processor for further processing.

GSM MODULE:

A GSM module or a GPRS module is a chip that will be used to establish communication between a mobile device or a computing machine and a GSM or GPRS system. The Modem (modulator and demodulator) is a critical part here.

ENCRYPTION:

Encryption is the process of encoding a message with an algorithm and is one of the aspects of cryptography.

It can be used in two ways are,

- For data in rest: used to reduce the physical storage and handling requirements for ICT equipment and media.
- For data in transit: Used to provide protection for sensitive or classified information communicated over public network infrastructure.

NFC CARD:

Near field communication (NFC) enables two electronic devices to communicate with each other. NFC card can be used for variety of application such as ticketing access control, marketing, and advertising.

KEYPAD:

Keypad is used to enter the input details. We use 4*1 keypad. Buttons are up, down, scroll, display.

ATMEGA 328 CONTROLLER:

It is a single chip microcontroller which requires high performance and low power controller. It has a modified Harvard architecture 8-bit RISC processor. An alternative to the AT MEGA 328 is the” Pico power” ATMEGA328p”.

- GND is given to the ground pin of the Arduino
- IRQ is not connected
- MISO is connected to digital pin 12
- MOSI is connected to digital pin 11
- SCK is connected to digital pin 13
- SDA is connected to digital pin 10

POWER SUPPLY:

Transformer is a passive electrical device that transfer electrical energy from on electrical circuit to one or more circuit. Rectifier is an electrical device comprises of one or more diodes which allow the flow of current only in one direction it converts AC to DC. Filter is a device that removes some unwanted components. IC regulator are three terminal devices that provide a constant DC output voltage that is independent of input voltage. The load is a component that consumes electrical power.

This connection is done through the SPI

PRINTER:

Printers are output device used to prepare permanent output device used to prepare permanent output devices on paper. The paper can be easily anonymously delivered.

AES ENCRYPTION:

AES (advanced encryption standard) is a symmetric encryption algorithm. It was designed to be efficient in both software and hardware and supports a block length of 128 bits.

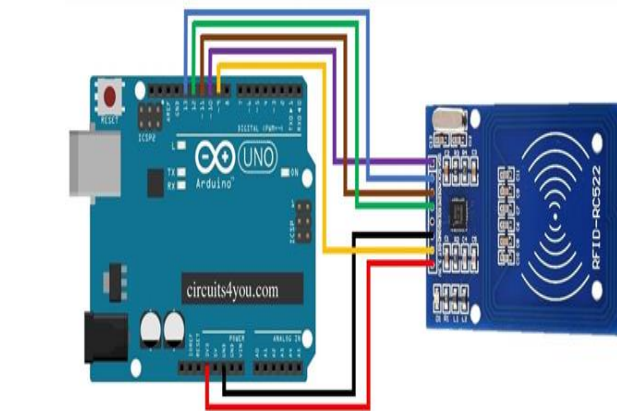


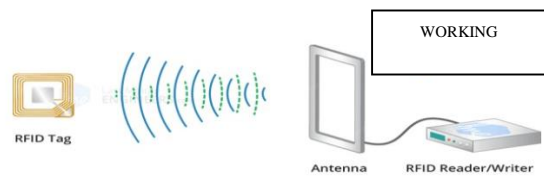
Figure (e) interface between RFID Reader and Arduino

The connection of the RFID Reader is given to the Arduino as follows:

- 3.3v is given to the 3.3v pin of Arduino
- RST is given to the digital pin 9

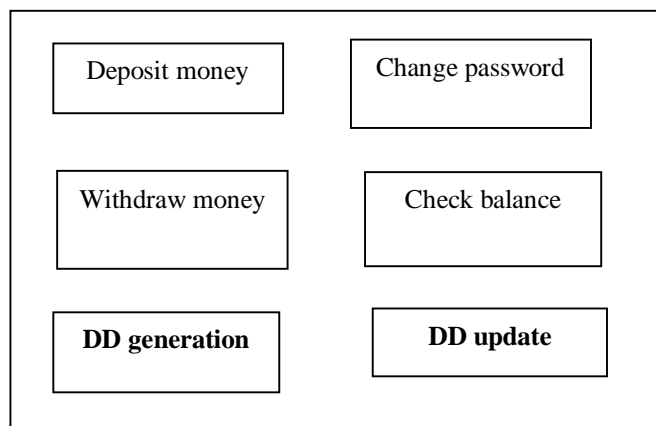
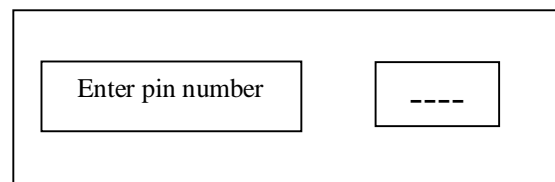
The serial peripheral interface is a synchronous serial communication interface specification used for short distance communication primarily in embedded system.

IV. WORKING



A reader consists of a radio frequency module and an antenna which generates high frequency electromagnetic field on the other hand the tag is usually a passive device it does not contain a battery it contains a microchip that stores and processors information and an antenna to receive and transmit the signal. To read the information encoded on the tag it is placed in close proximity to the reader (does not need to be within direct line of sight). The reader generates the electromagnetic field which causes electrons to move through the tags antenna and subsequently power the chips.

SMARTER WAY OF BANKING:





After selecting the DD, our system ask to enter the account number followed by amount. If the balance is available it ask 4 digit pins. Once it was accepted the amount will be transferred to the account directly in the form of DD. Then we got acknowledgement through printout and SMS for both people. Drawer can get the money if they only know the encryption code. The code acknowledgement will send through the message by the drawee using encryption method. When we select send DD and form application is open. Then we have to fill the detail.

V. CONCLUSION

The system for early forest fire detection is still in its development stage. We are still waiting for some equipment to be purchased, but we have planned and discussed the actual implementation. We have performed a thorough research and some simulation experiments and we believe that we follow the right way to achieve the goal. We also believe that we apply adequate approach that is also up-to-date. We think that the system could enhance the available platforms for fire detection and we hope that such improvement could significantly reduce the damages caused by untimely or late fire detection

VI. REFERENCE

- [1] S. Deepak and R. A. Kumar, "Automated demand draft processing machine using biometrics," 2017 *International Conference on Intelligent Computing and Control (I2C2)*, Coimbatore, 2017, pp. 1-4. doi: 10.1109/I2C2.2017.8321958
- [2] S. Sridharan and P. Arora, "Architecting the design for demand draft generation using the automated teller machine," 2015 *International Conference on Computer Communication and Informatics (ICCCI)*, Coimbatore, 2015, pp. 1-6. doi: 10.1109/ICCCI.2015.7218112
- [3] B. Suganya, K.V. Soundarya Devi, M. Revathi, "Automatic Demand Draft Withdrawal Machine Using Microcontroller" in *International Journal of Students Research in Technology & Management Vol 2 (02)*, March-April 2014, ISSN 2321-2543.
- [4] Srivatasan Sridharan, Sridhar Jammalamadaka "Conception of A Banker's Cheque Using ATM Interfaced with Trusted Third-Party Server" in *International Journal of Advanced Computational Engineering and Networking*, ISSN: 2320-2106.
- [5] Mohd. Arif Siddique and, Dr. Armit Kumar Awasthi "An Advance ATM Machine Service: Making Demand Draft through ATM Machine" in 5th IEEE International Conference on Advanced Computing & Communication Technologies [ICACCT-2011] ISBN 81-87885-03-3.
- [6] Stuti Saxena, Lipsa Ahuja, Kunal Gupta, "Implementation of E-Demand Draft" in *International Journal of Computer Applications (0975-8887) Volume 100- No.13, August 2014.*
- [7] C.V.P.R. Prasad "Dd/Po/Tc through ATM" in *International Journal of Hybrid Computational Intelligence*, January-December 2011.
- [8] Dhiraj Vasant Kapare, Sadashiv Lokhande, Sayaji Kale, "Automatic Cash Deposite Machine with Currency Detection Using Fluorescent and UV Light" in *International Journal of Computational Engineering Research (ijceronline.com) Vol. 3 Issue.*
- [9] Mandalapu, D. Deepa, L. Raj and A Dev, "An NFC featured three level authentication system for tenable transaction and abridgment of ATM card blocking intricacies", 2015 *International Conference and Workshop on Computing and Communication (IEMCON)*, Vancouver, Canada, October 15-17, 2015, IEEE Xplore.
- [10] Manoj.B, Manjula N Harihar "Image Encryption and Decryption using AES" in *International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249- 8958, Volume-1, Issue-5, June 2012*
- [11] Sudhanshu Suhas Gonge, Asholk Ghatol, "A Cheque Watermarking System Using Singular Value Decomposition for Copyright Protection of Cheque Images", Springer International Publishing Switzerland 2016, S.M. Thampi et al, (eds.), *Advances in Signal Processing and Intelligent Recognition Systems, Advances in Intelligent Systems and Computing 425*, DOI: 10.1007/978-3-319-28658-7_11.
- [12] A. Meschtscherjakov, M. Tscheligi, C. Gschwendtner and P. Sundström, "Co-Designing for NFC and ATMs: An Inspirational Bits Approach", 15th *International Conference on Human-Computer Interaction with Mobile Devices and Services*, Munich, Germany, August 27 - 30, 2013, ACM.
- [13] H. Lee, W.C. Hong, C.H. Kao and C.M. Cheng, "A User-Friendly Authentication Solution Using NFC Card Emulation on Android", 7th *International Conference on Service-Oriented Computing and Applications*, Matsue, Japan, November 17-19, 2014, IEEE Xplore.
- [14] R.M. Ranasinghe and G.Z. Yu, "RFID/NFC device with embedded fingerprint authentication system", 8th *IEEE International Conference on Software Engineering and Service Science (ICSESS)*, Beijing, China, November 24-26, 2017, IEEE Xplore
- [15] Karpakalakshmi et al, "Demand Draft Withdraw Automatic in ATM System", *UNIASCST*, Vol. 1, no.2, pp. 74-77, 2011.
- [16] S. Sridharan and K. Malladi, "New Generation ATM Terminal Services", *International Conference on Computer Communication and Informatics (ICCCI -2016)*, Coimbatore, India, January 7-9, 2016, IEEE Xplore.
- [17] Yun Yang and JiaMi, "ATM Terminal Design is based on Finger Print Recognition", *International Conference on Computer Engineering and Technology*, Vol. 1, pp. VI-92-VI-95, 2010.
- [18] G. Mujtaba, "Adaptive Automated Teller Machine Part-I", *International Conference on Information and*



- Communication Technologies, 2010.
- [19] G. Mujtaba, “Adaptive Automated Teller Machine Part-II”, International Conference on Information and Communication Technologies, pp.1- 6, 2011.
- [20] A.B. El-Hadded and M.A. Almahmeed, “ATM banking behavior in Kuwait: a consumer survey”, International Journal of Bank Marketing, Vol. 10, pp.25-32, 1992.
- [21] Zhi Zhong et al., “Energy Based Surveillance systems for the ATM Machines”, Eight worth Congress on Intelligent Control and Automation, pp. 2880-2887, 2010.
- [22] A.S. Adams and K.A. Thieben, “Automatic Teller Machines and the Older Population”, Applied Ergonomics, Vol. 22, pp.85-90, 1991