

SPEAKING ATM USING SPEECH SYNTHESIS

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Abstract: Our project is specially designed Automated Teller Machine which can be operated independently by visually impaired person, known as Speaking ATM. Speaking ATM is the preferable medium for Blind people to get their money in demand. Talking ATM invented in Australia is based on unique voice recognition system. Our project overcomes the disadvantage of unique voice interface and difficulty in searching for buttons in ATM. Here we have procedures for providing authentication to authorised users. The technique is Personal Identification Number(PIN), which means that users can easily access their account. Delivery of balance statement is based on voice response by using text to voice conversion technique. Cloud storage is done, by which a user use this file under “pay and use” mechanism.

Keywords: ATM, PIN, MD5 algorithm

I. INTRODUCTION

ATM (Automatic Teller Machine) is a electronic machine, which allows the users to complete basic transaction without the help of branch representative. The basic unit of this machine is to allow the customer to withdraw cash and receive a report of account balance. ATM is scattered throughout the city, allowing the customers to easily accessing their accounts. It is a banking terminal that accepts deposit and dispenses cash. This is a computerized machine that permits the users to gain access to their accounts with encoded plastic card and a code number. It enables the users to perform several banking operations without the help of bank staffs, such as to withdraw cash and to check the balance. These are activated by inserting a card that contains the users account number and pin number on this stripe. These are used to verify the account balance and then transmit the transaction notice. ATM can be easily access by the users in earlier days. But the visually impaired people find it too difficult to operate the machine, so the inventors are eager to develop a new machine. Nowadays the whole system of ATM machine has been changed. That is, the disabled people too easily access the machine without the help of others.

II. EXISTING SYSTEM

There are so many system has been existed to secure the blind users for avoiding theft. But it is not too effective to the users. Like voice recognition system, touch panel operation and talking ATM was authenticated. This algorithm doesn't provide much more security for the blind people in the ATM.

Similarly they do not conduct transactions without the degree of security. In voice recognition system, there is a problem regarding unique voice interface. That is, the speech rate, pitch modulation and frequency differ according to their voice. In touch panel system, if they don't place the finger in the correct position, the transaction will not be processed. Similarly, it receives sound after entering the number. In talking ATM system, the blind people can't identify the buttons, even through the audible instructions will be provided.

III. PROPOSED SYSTEM

Speaking ATM is a proposed system which we are going to deal in our project. In this system, we explore the languages like JavaScript and Php. Delivery of balance statement is based on voice response by using text to voice conversion technique. Cloud storage is done, by which a user use this file under “pay and use” mechanism. Blind peoples can easily access to machines instead of pressing buttons. Keypad button orientation is provided so that a visually challenged person can easily find buttons like Clear and Enter. Also these three function keys have distinct raised symbols so that a visually challenged user can feel and press a correct key. In our project we are using MD5 algorithm to secure the users during the time of transactions and to avoid fraudulence and theft. User traverses over the screen and when they reach intended place voice is thrown. Precautionary knowledge of enter the number instead of acknowledging after entry. keypad number starts from 0 to 9 which that users move through mouse and that number which is pressed is supported by beep sound.

IV. MODULES

USER ACCOUNT DETAILS

In this module, the user will insert the ATM card to enter the account number, and it will be checked in the database to be processed further. After that, if the database confirms the account number, the relevant details will be provided to the users to continue their ATM process.

PIN DESIGN DETAILS

In this module, the pin number will be required by the users to access their accounts. On entering the correct pin number, it will be checked in the database to verify their accounts. Finally user can choose according to his need, whether to select withdrawal or balance statement options. In our project we are using MD5 algorithm to secure the users during the time of transactions and to avoid fraudulence and theft.

MD5 ALGORITHM

The Md5 message-digest algorithm is a widely used cryptographic hash function producing a 128-bit(16-byte) hash value, typically expressed in text format as a 32 digit hexadecimal number. It has been utilized in a wide variety of cryptographic applications, and it also commonly used to verify data integrity. In Md5 algorithm, we are using two process such as Encryption and Decryption techniques. **Encryption** is the most effective way to achieve data security. To read an encrypted file, you must have access to a secret key or password that enables you to decrypt it. **Decryption** is generally reverse process of encryption. It is the process of decoding the data which has been encrypted into a secret format. An authorized user can only decrypt data because it requires a secret key or password.

```
$salt=strtr(base64_encode(mcrypt_create_iv(16,MC
RYPT_DEV_URANDOM)),'+','');
$salt=md5($amount).$salt;
$hash=crypt($amount,$salt);
echo $hash."<br>";
if(crypt($amount,$hash)==$hash)
{
echo "u r in."<br>";
}
else
{
echo "u r out";
}
echo $hash."<br>";
```

WITHDRAWAL

On choosing the withdrawal option, the user can enter the money after it has been validated in to the database. If the amount has been exceeded the main balance, the database will send a message to the ATM machine that will be audible to the users using text to voice.

BALANCE STATEMENT

On choosing the balance statement option, after that which will be processed into the database and sends a message to the ATM machine that will be audible to the user using text to voice.



Figure 1: Scenario of the proposed method

V. MODULE DESIGN



Figure 2: Overall Usecase diagram

Our project consist of 4 modules,

- USER ACCOUNT DETAILS
- PIN DESIGN
- WITHDRAW
- BALANCE STATEMENT

a) USER ACCOUNT DETAILS

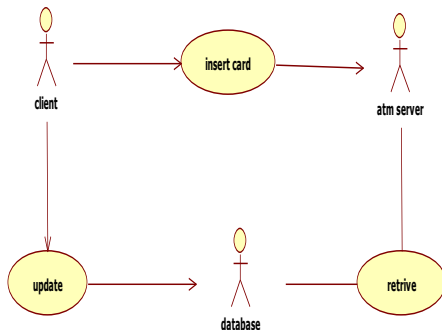


Figure 3: Usecase Diagram- User Account Details

In this module, the user will insert the ATM card to enter the account number, and it will be check in the database to be processed further. After that, if the database confirms the account number, the relevant details will be provided to the users to continue their ATM process.

b) PIN DESIGN

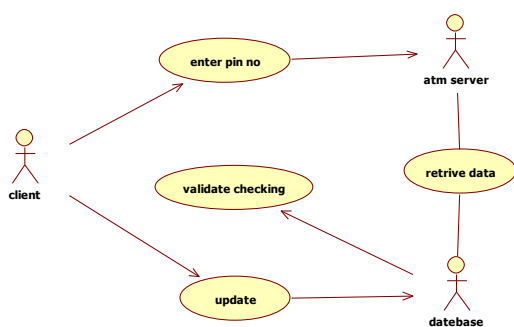


Figure 4: Usecase Diagram- Pin Design

In this module, the pin number will be required by the users to access their accounts. On entering the correct pin number, it will be checked in the database to

verify their accounts. Finally user can choose according to his need, Whether to select withdrawal or balance statement options.

c) WITHDRAW

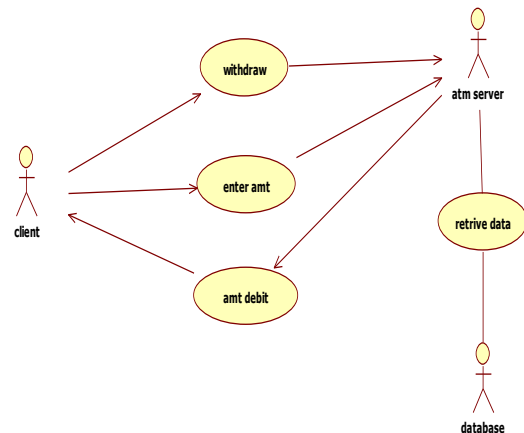


Figure 5: Usecase Diagram – Withdraw

On choosing the withdraw option, the user can enter the money after it has been validated in to the database. If the amount has been exceeded the main balance, the database will send a message to the **ATM** machine that will be audible to the users using text to voice.

d) BALANCE STATEMENT

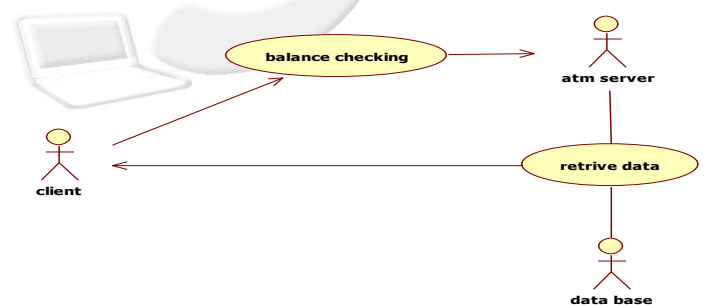


Figure 6: Usecase Diagram –Balance Statement

On choosing the balance statement option after that which will be processed into the database and sends a message to the **ATM** machine that will be audible to the users using text to voice.

[2] Keijiro Usui, Masamitsu Takano and Ikuko E. Yairi: "Sound Presentation Method for Touch Panel Regarding the use of Visually Impaired People," Proceedings of SICE Annual Conference 2010, pp. 2992–2998, 2010.

VI. MODULE SCREENSHOT



1) User Account Details

The image shows a web form for user account details. It features a single-line text input field at the top. Below it is a numeric keypad with blue buttons containing the digits 7, 8, 9, 4, 5, 6, 1, 2, 3, 0, CLR, and ENTER. A large, faint watermark of the IJCR CST logo is visible in the background.

2) Input Selection

The image shows two blue rectangular buttons with white text. The top button is labeled 'Withdrawal' and the bottom button is labeled 'Balance Statement'. Both buttons have a subtle pattern of light blue circles. A large, faint watermark of the IJCR CST logo is visible in the background.

VII. CONCLUSION

In this paper, we have proposed an useful and efficient method for the blind users to easily access their account and this is based on Web Application. The service provided by the proposed system is valuable and required in the **ATM** centre. In our project, we are using **MD5** algorithm to provide more security for the blind people. The future work of the system is to provide additional languages for the users to easily choose their language and also to extend the security.

VIII. REFERENCES

[1] Bo Cui, Tongze Xu." Design and Realization of an Intelligent Access Control System Based on Voice Recognition". ISECS International colloquium on computing, communication, control and management, press 2009.