

Digital Tranquillity in Cheque Transaction System

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Abstract - Over millions of transactions execute everyday in banks all over the world which involves transactions with cash, cards and cheque. Public and Private banks involves different procedures for cheque system, where private banks can handle queues conveniently whereas public banks cannot handle it effectively and efficiently. Every cheque transactions takes time which includes cash withdrawal through cheque that has prolong and monotonous queue that make it exhausting. In most of the public banks there are queues which are not organized due to the lack of queue management, although private banks handle it in a more organized manner with different clerks to resolve issues for each person. The long and hectic queues can be removed by digital transactions with simple and easy steps without any hustle by using the proposed technology for quick transactions.

Key Words: Public and Private banks, digital transactions, cash withdrawal, cheque, quick transactions.

1. INTRODUCTION

From the beginning of the era, Financial institutions are the crucial part of the country where people reliably deposit their monetary items without any dispute. There are different financial institution on which people can rely with different terms & conditions, interest rate, policies and procedures. In India, public sector banks are more lethargic and negligent which makes bank's customers more displeas. In the world of technologies, public sector banks and few other financial institutions still persist in reaching new and advance technologies which makes it more difficult for them to appease their customer's needs. With this project we are making an effort to collaborate with banks to make sure of more secure, simple and digital way of deposit and withdrawal of cash through the means of cheque.

Optical Character Recognition (OCR) is considered as one of the important tools that contributes to the communication machine. It is the conversion process of printed or handwritten text images into machine-encoded text [1]. Using digital system, cheque transactions can be done easily with four-digit PIN number which is directly connected to user's corresponding bank account number. This system will use OCR and barcode technology to implement the cheque transactions. Optical character recognition (OCR) has become one of the most important techniques in computer vision, given that it can easily obtain digital information from various images on the Internet of Things (IoT) [2].

OCR will recognise the text mentioned on the cheque which fetches the important details and barcode which will be on the cheque to directly link to its corresponding account details.

The main focus on this project involves cash withdrawal or deposit through cheque easily. The self payable cheque can withdraw or deposit amount through his/her PIN number using barcode technology similarly, the cheque issued to other person enter its PIN number and uses OCR or text recognition technology. The user can insert the cheque in the machine and with simple steps cash will be withdraw or deposit directly in the bank for the ease and convenience of the user.

2. NEED OF THE TECHNOLOGY

Optical character recognition is a technique in which a scanned images or handwritten notes are converted into digital format. Optical Character Recognition consists of various stages includes pre-processing, Classification, Post Acquisition, Pre-Level processing, Segmented Processing, Post-Level processing, Feature Extraction [3]. Cheque transactions are bit intricate and prolong as it entails long and unorganised queues which cause more strenuous and time consuming for the people. By using digital technology, we tend to save lavish time of the people with few simple and easy steps. It will remove the manual work for the cheque transactions which makes it easier for the bank's client and banks' employees. There would be no need of keeping the records or cheque statements manually as everything will be automatic. All the transactions will be updated automatically in the database server of the bank that will be directly linked to system without any bank's employee manual task.

3. IMPLEMENTATION

Implementing this systematic approach, most of the overburden will truncate from bank's employee as well as customer. By reducing the load, anyone can anytime withdraw or deposit the money through cheque within few minutes only with its one authentication PIN number.

Digitalization is a new watch word in the banking sector with banks all around the world. The world is gliding towards an unified interface connected through digitalization. A customer shift towards a seamless transaction is in the offing [4]. Firstly, user will insert cheque in the digital machine, OCR technology will detect text written on the cheque whether its payable to self or to someone else account holder. Then OCR technology will detect two things on the cheque, whom the cheque is payable to and amount to withdraw or deposit. Barcode mentioned on a cheque will be detected through barcode scanner for fetching the account balance of cheque issuer’s account, If the amount mentioned on the cheque exceeds an amount present in the bank balance of cheque issuer then message will pop up with “INSUFFICIENT BALANCE” else further process will continue. With sufficient balance in the account, user can either withdraw or deposit the amount by entering his/her 4-digit PIN number for authentication.

In case of multiple people have same name as mentioned on the cheque then it will search the list according to the last 4-digit of the account number entered by the user for fetching his/her account number from the list then user can enter its PIN number.

3.1. CHEQUE INSERTION

With higher and advanced technologies we are putting an effort to make people life at ease [5]. Digital payment methods (DPMs) are evolving fast but they are yet to be widely adopted particularly in the developing countries. An initial review of literature suggests that several studies have already been conducted on this topic for understanding antecedents of digital payments adoption [6].

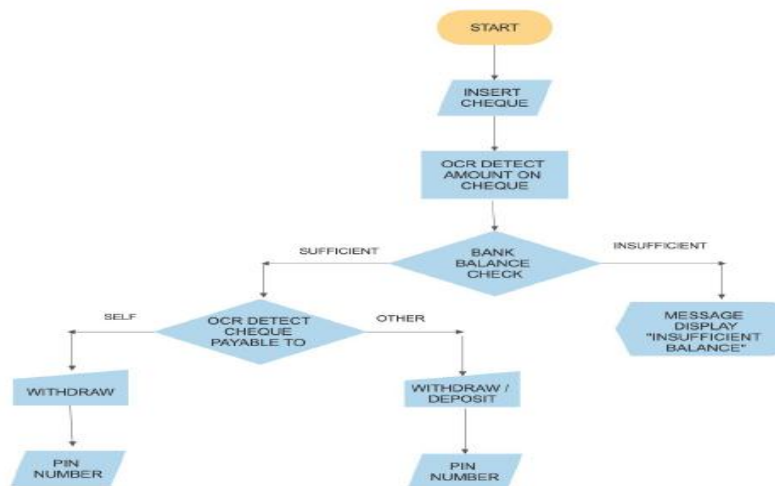


Figure 1: Flowchart of Cheque Transaction

User will insert a cheque into the digital system for further processing with following credentials:

- name on the cheque to whom payable (in block letters)
- amount to withdraw or deposit

3.2. BALANCE CHECK

After inserting the cheque in the digital machine, OCR installed in the machine will detect the amount mentioned on the cheque and it will be directly linked to the barcode scanner installed in the machine for fetching the amount present in the bank balance if account holder. If the amount mentioned on the cheque exceeds the amount in the account balance then it will pop up the message as “INSUFFICIENT BALANCE” as shown below:

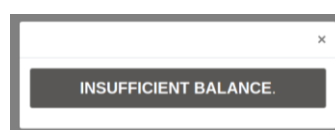


Figure 2: Snapshot of Insufficient Balance in Cheque Transaction

But if amount in account is sufficient for withdrawal or deposit from the cheque issuer’s account then the user can further process according to their choice.

3.3. OCR DETECTION

First hand, OCR will detect whom the cheque is payable to, whether, self or others automatically without any user input then it will automatically directs user to the window of withdraw or deposit. If by any reason OCR won’t be able to detect this then below window will pop open for further convenience of the user.

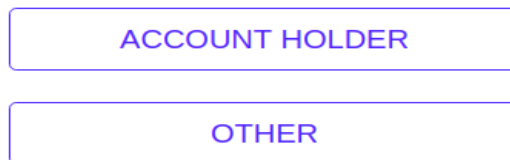


Figure 3: Selection of Options

After the selection of the user, if he/she selected the option as “Account Holder” then it means the cheque issued is payable to self so one option “Account Holder” will be highlighted as given below:.

Next window will be of “Withdraw” as self payable cheque can only withdraw money from account as shown:



Figure 4: Account Holder Selection Button



Figure 5: Withdraw option

For the authentication purpose and for the withdrawal of an amount, it is essential to enter 4-digit PIN number in the machine as shown below.

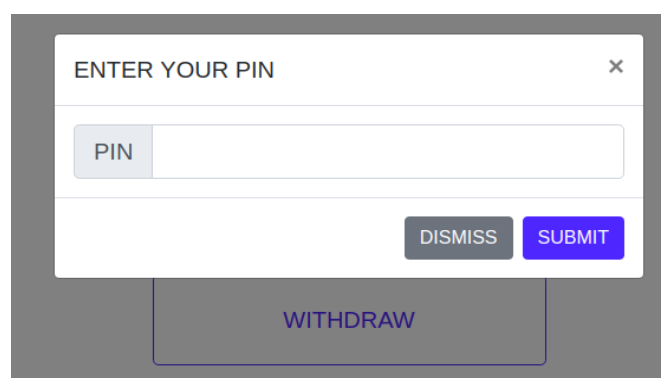


Figure 6: Enter PIN for Cheque Transaction

If cheque issued is not on self payable then user will select the “Other” option on the screen of the machine only if OCR scanner doesn’t work as shown below:.

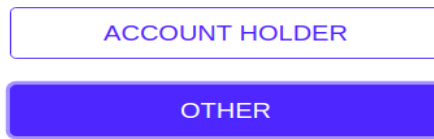


Figure 6: Other Selection Button

The new window will pop open after the selection of the “Other” account holder to whom the cheque is issued to, OCR will detect the name mentioned on the cheque for checking its corresponding account name holder in the bank for further processing. When corresponding account holder is found then below window will pop up for user choice and user can select according to their choice mentioned below for their preference:.

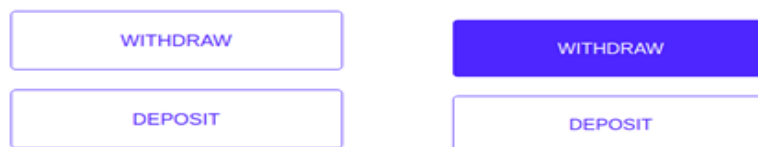


Figure 7: Withdraw and Deposit Selection Button

As the user selects which ever option as per their preference, user needs to enter 4-digit PIN number for the security and authentication purpose to withdraw or deposit the amount as shown below.

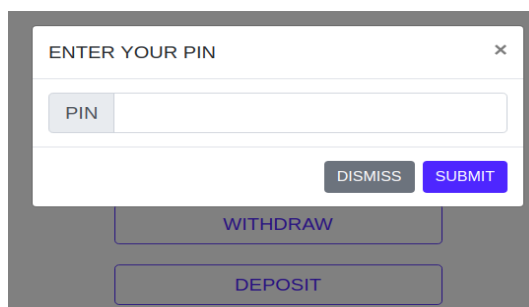


Figure 8: Enter PIN and Submit

In case of similar multiple account holder’s in the bank the user needs to enter the last digit of its account number for their convenience. The list is shown for the corresponding account number for similar multiple user in the bank as shown below: . As per their last four-digit account number, user will get its corresponding account number highlighted as shown below: . After accessing and selecting the correct user account, he/she needs to enter PIN number in the machine.

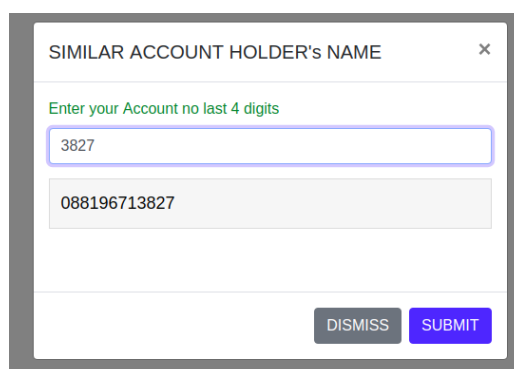


Figure 9: Enter Account Details

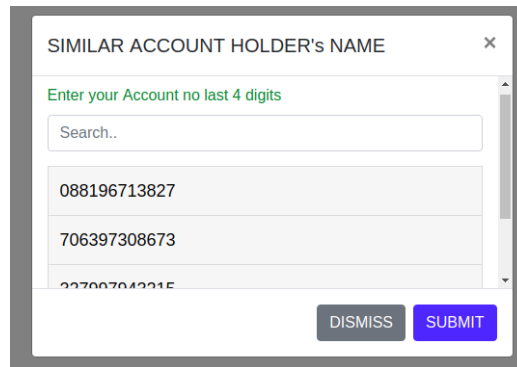


Figure 10: Enter Last Four Digits of Account Number

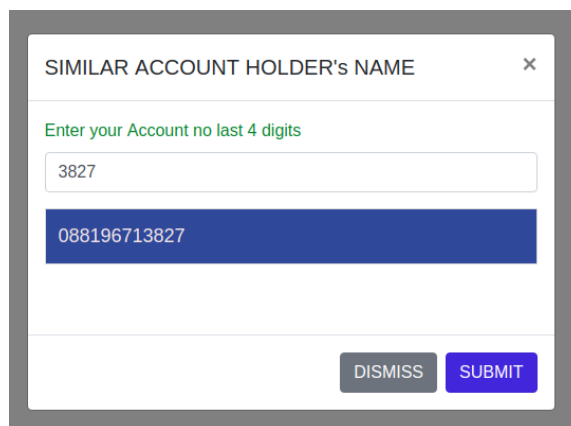


Figure 11: Verify Account Number

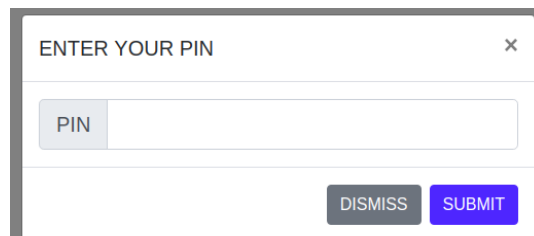


Figure 12: Enter PIN

3. HOW DOES OUR PROPOSED SYSTEM BENEFIT THE BANK CUSTOMERS?

By having past experiences, potential development can be guided by, to confirm the products development that always meet up quality standards and goals [7]. In absence of proposed idea, think about a scenario when a physical cheque payable at SBI, Kothapeta, Guntur, Andhra Pradesh, and gets deposited at SBI, Kolkata and has to be sent to SBI Kothapeta, Guntur, Andhra Pradesh from where the cheque would be presented to SBI locally to get it cleared. The whole process of realisation would take 5-6 days based upon the transit time. And in cases of branches located in deep rural areas, the total turnaround time to cash the cheque would be increased based upon the transit time of courier agency. And suppose the bank has some error, then it will be dispatched again to home branch for clearance. This takes another week for the customer to rectify the error like spelling of name. So, to summarize the cheque is all full of stamp and initials from officers of two banks and not en-cashed yet after 25 days of time. You can just imagine the over-work imposed on customer as well as bank official. To rectify all such hectic and lengthy processes, our proposed model will work in shortest span of time. As machine is much secure, fast and reliable for the customer to use and synchronize with real time database within few minutes for better accessibility.

4. CONCLUSION

By the end of this project the ultimate objective will be using the system for its best use as it will reduce monotonous task of standing in a queue and for longer hours. At each ending era, modernization grows rapidly with every phase as people are getting busier with their life but with the lack of the system a chaos has been created in the banks. For the ease, end user can easily get the cash withdrawal through cheque within few minutes without any futile work and time. Nowadays, due to work load on bank's employees this system will get rid of long and laborious task with snap of a fingers with few easy steps.

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