

# Reception Secure Authentication

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## ABSTRACT

Today the technological advancements have offered us opportunities to think farther beyond to what we used to. Now that we have the tools we must also develop a payment system that justifies the world we live in. Our system tries to do the same. Our system is a payment system which works solely on the biometrics. It is an efficient system which makes transaction of money possible just by a simple touch. Along with its efficiency it also brings effective security and reliability to the table. Matters which deal with money must be safeguarded and to do the same we make use of encryption algorithm to send and receive consumer information.

**Keywords :** Encryption, Spoofing, Reception Secured Authentication, e-learning, Finger Print, Biometrics, Cashless Payment System

## I. INTRODUCTION

A payment is dynamic in which two parties are involved, one which offers something usually in account for a service that he or she undertook. The other party accepts what is given until satisfied. The system that we created does the same, but makes the whole process as efficient as possible. We still use paper cash to do most of our purchasing. And if not we use our debit or credit card. This was taken to a different level when using e-wallets came into existence. Now our want to make everything seemingly effortless has forced us not even to use the cards and e-wallets. What comes next is the use of biometrics. A simple finger tap on the machine would complete lengthy payments into seconds. The efficiency of this transaction justifies the era of technology we live in. Transactions are one of the most frequent events that take place in our lives. Something this frequent being done with just a tap reduces a

lot of human effort. It does not just reduce the work to be put in it also opens windows to clean out the some evils that have resided in our societies for centuries now, for example Corruption. Such a payment setup inside a government campus may completely cut off the money being circulated under the table. Applications such as these may help us bring the best out of our society.

The other most important feature that biometric and specifically fingerprint payment offers is security and reliability. Security because it is very difficult to penetrate through a system that heavily relies on biometrics. There is no password to be guessed or a pin to be generated through fluke. All it takes is the owner's fingerprint. Now to recreate a fingerprint is a fairly difficult task. The security measures don't just stop there, it is the way databases are maintained and transaction are processed that form the bulwark of all security systems. Our system uses RSA algorithm for communicating with the web service that manage the databases which in turn hold the transaction records

and account information of the client using the system. The RSA algorithm is one of the most widely used encryption techniques to make communications between the sender and the receiver secure. The sender encrypts the package data with a key which is called the public key of the receiver. This key is known to all. On the other side the receiver decrypts the package with a key called the private key of the receiver. This key is just known to the receiver. Such an extensive system of encoding and decoding provides the system a security feature which is not provided by any of the methods that we use today. The reliability characteristic in itself is a cherry of the cake to this system. It is highly difficult to lose or forget one of the finger at home whereas this is almost an everyday case for most of the people in the case of a physical wallet. The idea that you always have money wherever you go is enough motivation to do meaningful work in this domain.

## 2. RELATED WORKS

Since the biometric technology becoming relatively cheaper and available it is used in various fields. It is used in attendance management system.[1] A model is also proposed by Mangala Belkhede in her paper Biometric Mechanism for enhanced Security of Online Transaction on Android system: A Design Approach where show discussed about the importance of biometrics in securing the online bank transaction on an android system.[2] Multibiometric device attempts to conquer those troubles with the aid of imparting more than one evidences of the same identification an extra advantage is spoofing of those multibiometrics simultaneously grow to be more tough for an interloper.[3] In the paper A multi-biometric system for continuous student authentication in e-learning platforms the authors discuss about the advantage of biometrics for the authentication of user in online education system. The problem here is that anybody could access the long distance program of universities if they have the proper login credentials but with the help of

biometric such as fingerprint bypassing the login window and accessing the course will become very difficult, hence resulting in improved security.[4]

## II. IMPLEMENTED MODEL

The system we have designed to overcome the problems stated above is encapsulated under a project called the Reception Secured Authentication [RSA]. The project is implemented inside a campus. The RSA system has three fronts of human interaction. Through these user interfaces we make it possible for the both parties involved in a payment to access the system and get benefited. We have tried to mimic a real world dynamic of consumer and a retailer.

These two make the first two fronts of the system. The third front is the administrative department. Now, the work of the administrative department is important to the system. This system works inside a campus. So all the three involved parties are present inside the campus. Every walking customer is registered to the administrative departments database. Even the retailers have already registered themselves. Whenever a consumer registers he also adds a specific amount of balance in his account with the help of the administrator. This is what happens next, a customer walks into a consumer store and likes a product. He take the product to the cashier. The cashier enters the price of the product in his application and asks the customer to tap on the scanner if he agrees with the total amount. The customer acknowledges the amount and presses on the scanner. Now the application reads fingerprint and the total amount. The fingerprint is converted into a hash code which is encrypted with the public key of the administrator. A packet of information is formed with both the encrypted fingerprint and the total billing amount. This packet is shared with the administrator. The administrator decrypts the packet with the help of his own private key and authenticates the user and deduces the billing

amount from his account. If a successful deduction is made , a message is sent to both the retailer and the consumer on their respective apps. If not , then an alert message is also forwarded regarding the issues responsible for the failure of the transaction. The consumer can always recharge his account with more money for further spending. In this manner , the consumer will never have to carry his wallet along with him.



**Fig 1:** Work flow Diagram

### III.CONCLUSION

In this paper a Biometric scanning system is a better alternative for payment rather than using cash or online money. Payment through fingerprint is reliable , effective and fast given the pedigree of fingerprint we have now a days. The naturalness of the fingerprint makes the system reliable and attractive to today’s youth. The learning graph for using the system is low. All the users will not have to worry about their banking cards and real cash.

In our system we are proposing the use of fingerprint which makes the system compelling for larger

audiences as it is fast and secure. Minutiae extraction done in scanning the fingerprint will check the stored minutiae present in the database, If the entry is valid then the system will automatically deduct the bill amount from the balance amount.

The system can make transaction easy and efficient. There is a space for vast future improvements in this proposed system. The applications and modifications for this model are immense.

### IV. APPLICATION

Application of this project is quite realistic and still seems like an idea. The system can change how we purchase goods in the future. This can be easily implemented in a closed campuses which are away from the city and where you can implement a central system. The idea of this project can be further used to make an entity like a bank where you can just deposit your money and forget about using real cash while you are in the cash. This is a very good alternative for educational and training campuses which are located in remote areas and are closed campus. The system can also be used in supermarkets which are located in the city , as all the customer has to do is make a new account in the supermarket and everytime they come to take grocery or any other item all the have to do is put there finger against the fingerprint scanner and the amount will be deducted for the supermarket’s database. This reduces the problem of cash and carrying cards every time for shopping. An ecosystem could be made out of this project where all the local shops in an area can use this model so they all can use a single database for transaction. The application can be further extended for use in government offices which reduce corruption and can life of various citizens easier.

The system has a great advantage over already existing system and that is the elimination of credit cards and cash. A secured central entity could make

transaction as we know it know a lot different in the future. The applications of this system extends from a small campus to a small locality. This system can be used in hospitals, schools , colleges , training centres , offices, army campuses etc.

## V. FUTURE WORK

Every human being has a different fingerprint but it doesn't mean that the system is secured and without any flaws. Spoofing is still a major challenge when security is considered. Spoofing is the use of forged biometric object in place of a real one. A possible solution to avoid this can be detection of blood flow through the fingers which cannot be imitated in spoofing. Spoofing can be done by making a mold of plastic originating from both a live finger and a latent fingerprint. A better fingerprint detection algorithm is required which can potentially eliminate the risk of spoofing and which could make system more secure.

Another problem the system can face is the use of strong and highly protected database for the transaction as any bypassing and accessing of database by any unauthorized person can create havoc and can make the system to fail.

The future work could also include a fingerprint based ATM which could eliminate the use of plastic debit and credit cards. Banks using only the fingerprints for validating for doing transaction. The boost of artificial intelligence in recent times could be used for this project too. Using the data collected by the system , users spending patterns can be realised and used for budget prediction and can make monthly budgets for the users and can also help them in monthly planning of expenses. Data mining could be done on the data that will be gathered and a lot of important information could be found.

## VI. REFERENCES

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