Fingerprint Payment

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Abstract- In this digital world, payments are also evolving with the technology. At first there was only single payment method ‘cash’. After that electronic card like debit card and credit card were introduced. Nowadays mobile wallets are getting popular. But all these conventional payment methods have problems. Cash payment have problem of change. Debit and credit cards are not for everyone. Only literate people can use these cards properly. In case of cards one has to remember about the pin of the card. If one forgets the pin of card the none has to follow along procedure to reset the pin. Also, cash credit/debit cards and mobile phones can get stolen. So, to solve all these problems we came with a solution for payment using fingerprint. In this method to perform a payment one has to just tap the finger on fingerprint scanner and within seconds’ payment will be done. The scanned fingerprint will be sent to server for matching and if it is matched payment will be done or else payment will fail. This solution will allow even illiterate people to use digital payments as they will have to set up account only once. And later on, they can perform payments with just touch of finger. This will also reduce the time consumed for payment.

Keywords- Fingerprint, conventional, payments, verification, scanner, SDK, authentication.

I. INTRODUCTION
So, to make digital and cashless payments easier and convenient for the common citizens, we designed a system with more easily and secure method, with two-factor authentication provided along with fingerprint it becomes nearly impossible to steal an account from the user. First the seller will enter the payment amount on the mobile phone, after verifying amount manually customer will only touch his fingerprint on the scanner at the store and enter his secure pin (for two-factor authentication) and after successful authentication the payment will be received by the seller. The payments will directly be done from the registered Bank account of the customer without any intermediate wallet.

II. EXISTING SYSTEM
There are currently three majorly used payment systems in existence. These three are cash, electronic cards, e-wallets. In all of these three systems the major problem is you always have to carry something with you to complete the payment. Cash is oldest payment method used. To perform payments using cash we need to carry cash everywhere, change also becomes major problem while using the cash as a payment method, and cash flow cannot always be tracked (increases the potential of black money). Electronic cards like credit card or debit card solve the problem of change but again need to be externally carried and protected by the users. Electronic cards need to be handled with precautions. Not everybody is able to use the credit/debit cards. The same problem is also there with e-wallets.

III. SCOPE
Payments are the basic need in any society. Nowadays digital payments are preferred by the consumers over the traditional cash payment method. The payments need to become more hassle free than they are. In the fingerprint payment method, it is very easy and fast to do the payment without using any external device (mobile phone)/card. The consumer doesn’t need to carry any cash, card or device, so he/she will feel no difficulty in payment like for getting/ misplacing a card or mobile. This payment system can be used in malls, petrol pumps, railway stations, movie theaters, hotels and even in the general stores.
IV. FEASIBILITY STUDY

1. Technical Feasibility
This project is feasible with respect to technology. In this project required resources (fingerprint scanner, SDK for fingerprint scanner) are quite easily available, hardware can be bought from local/online stores and the Software Development Kits available on various websites. In this system the customer does not need to carry any device so it can be easy for him/her. The device used to scan fingerprint will be provided to the stores and the device will become pact and relative Ely afford able for shop keepers.

2. Financial Feasibility
The Project needs only a Fingerprint scanner and a mobile phone which is easily available. Also, it is available at moderate cost and can be purchased easily without any hesitation and also every Shopkeeper has a phone which he can use to connect scanner and receive payments.

3. Time Feasibility
The time given to actual development will be divided in android app, backend server (processing finger print matching). For demonstration purpose it is required to develop a dummy bank database and website (to show the data) to reflect the transactions done and verify working of the system. The requirements and work to be done is understood by all the team members and the work is shared amongst the three team members. Also, we can help each other using remote access to pc and without physically being there. So, the work will be well planned and so will be completed in given time period.

4. Operational Feasibility
For the operation (Payment) the customer physically only needs his fingers on device to be carried by him/her, whereas, the shopkeeper will have the fingerprint scanner connected to his Android phone.

   The customer will enter the shop, select some product, the shopkeeper will then enter the payment amount on his Android app and the customer will verify the amount (if he wants to) and put his fingerprint on the scanner, enter his security pin and after matching both the payment will be done and bill will be given by the shopkeeper. The whole process will take just couple of minutes.

IV. DATA FLOWDIAGRAM

Fig. 2 Level 0 Data Flow Diagram.

Fig.3 Level 1 Data Flow Diagram.

V. APPLICATIONS

- Payments in Mall
- Daily Shopping at Local Stores
- Petrol Pumps/Gas Stations
- ATM
- Bill Payments (Electricity)
- Government Sector
VI. CONCLUSION

So finally, from all of the information specified above we conclude that –

• The Fingerprint Payments can be revolutionary and make a very big difference in the perspective of the customer about the payments.

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