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Digital Wallet for Transactions

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Abstract— Physical wallets have their own downsides. It can be difficult as well as time consuming to have or look for the exact amount of change as the value of the purchased good or service. To overcome this drawback, one solution could be the digital wallets. The aim is to develop an online payment facility. The digital wallets provide its customers with better and faster facilities. It also reduces the manual overhead of maintaining ones account.

Keywords— digital wallet, digitalization, online payment, security, encryption

I. INTRODUCTION

A digital wallet is a service that provides facility for a customer or merchant to store their personal information, payment data, etc in a single place, which can be used for online transactions. An e-wallet eliminates the need to carry cash or credit or debit cards for making payments. The purpose of our system is to have an online payment application that can be accessed throughout the organization and outside as well with proper login for the account created. This platform would be very convenient for the customers and merchants to make payments within fraction of seconds. Also, there is no chance of a decline of payment as the e-wallet is a prepaid account.

II. LITERATURE SURVEY

[1]The banking industry had an array of payment products –cheques, demand drafts, national electronic funds transfer,real-time gross settlement system, immediate payment service, net banking and mobile banking – but found that people needed an easier, simpler way to make payments.The above mentioned paper specifies various ways of making payment namely :

Contactless payment

Locating a store

Virtual cards payment

Using quick response (QR) codes

This paper reveals the working and importance of using e-wallet in today's world provided with some future use of e-wallet.

The second reference paper presented guidelines for the design of an m-wallet,found in the literature and existing solutions, and used these when developing prototypes of m-wallets and when comparing these m-wallets to existing mobile payment solutions. According to the paper m-wallet can be described as [2] An m-wallet is a personalized digital artifact that contains electronic payments instruments such as virtual currencies and payment cards, repository for receipts and tickets, identification cards such as passports, drivers' licenses and insurance cards, and personal items such as pictures and shopping lists.

The phases involved in designing the m-wallet are awareness and suggestion phase,development phase,evaluation phase and conclusion phase.

The third reference paper presented the challenges which would be faced by the customers and how a developer can overcome them by proposing new techniques.Basically the main focus was given to the security issues as any system stores some valuable data into it ,intruders or hackers are likely to attack the system .In order to protect the digital money and personal information of the wallet owner ,they choose encrytption techniques to maintain privacy. In security mechanism ,three funadamental features were proposed:

1.)Confidentiality 2.)Integrity 3.)Non-repudiation

According to this,Security mechanism at sender and buyer end were proposed.

The fourth reference paper mainly presents us the characteristics and types of E-Wallets.

It highlights the need to develop the E-wallet system and working of the system is discussed too.An Encryption algorithm mainly known as RC4 to gurantee a secure transaction.However it has some disadvantages but some of its advantages balances it very well.It also discusses the problems faced by using the e-wallet system.Discussion on replacement of digital wallet by any other mode of payment is done.

The fifth reference paper presents the various payment method systems which are adopted by Canada.Various payment systems such as Apple's ipay,Masterclass and V.me are used int the form of digital wallets.How digital wallet play an important role in citizens in Canada is elaborated.

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III. PROPOSED WORK

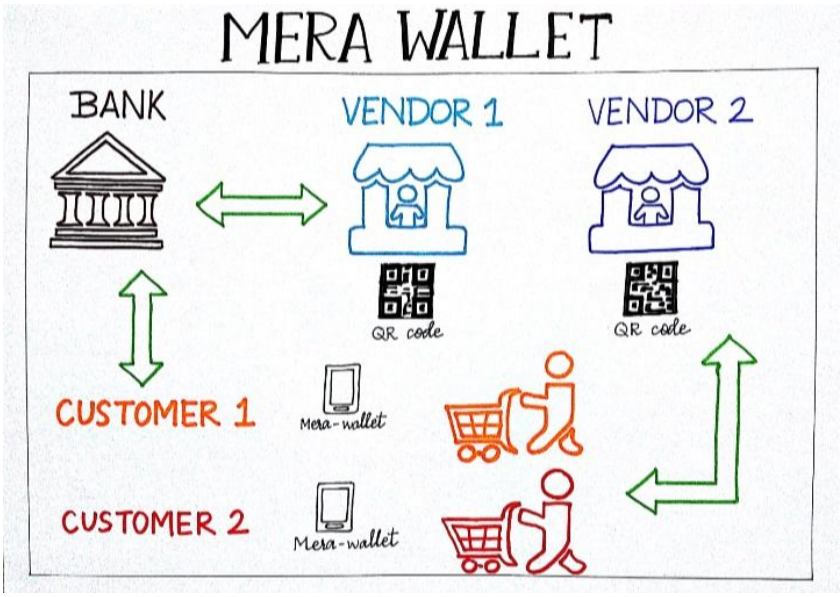


Fig. 1 Mera wallet prototype

IV. PROTOTYPE ARCHITECTURE

The above figure shows that the m-wallet holder can be a vendor or customer who can exchange the digital money through this application. A centralized bank holds the account of wallet users.

A. Registration and Login Process

While registration the user's personal as well as account information (account number,bank branch) is taken to link the wallet with bank. As the above mentioned process is online a proper security constraints are applied. The password set and the username will be used to login in app.

B. Money Transaction Scenario

The wallet provides easy facility to save money from bank in form of digital figures into wallet as bank account is linked with the perticular wallet. The transfer of digital money from wallet to wallet is done through scanning of QR code. QR code consist of the basic wallet details of user . Again various security constraints like OTP(One Time Password) is used while transfer .
This concept is distributed transaction , so proper conditions are set that if the process begins, both the parts(payee and payer) is carried out simultaneously, i.e both the parts are updated or none of it.

V. PROPOSED ALGORITHM

In our proposed method ,once the QR code is scanned ,the OTP is generated at sender's side and is send to customer's mobile number. The entered OTP is verified and after approval digital money is transfered.

VI. RESULTS

The first test case which gave us the expected result was- according to wallet Id ,the money transfer was done from the bank into the wallet.After this the further change was made which included transactions via QR code,which was successfully implemented .

VII. CONCLUSION

Nowadays almost every field of marketing is using online payment methods.Hence a smart digital pocket wallet is a super easy way to manage one's transaction and have a safe money trade.Making use of such apps are user-friendly and should be taken into consideration by every person.

VIII. FUTURE SCOPE

After conducting the survey of the digital wallet payment system ,it is seen that nowadays youngsters are more comfortable to use digitiliazed wallet system and are tending towards cashless system so it is very important to secure the transaction

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process.Hence in future ,more focus could be given on the security parameters as well as new advanced techniques can be included too,which would promise a smooth and secure transaction process.

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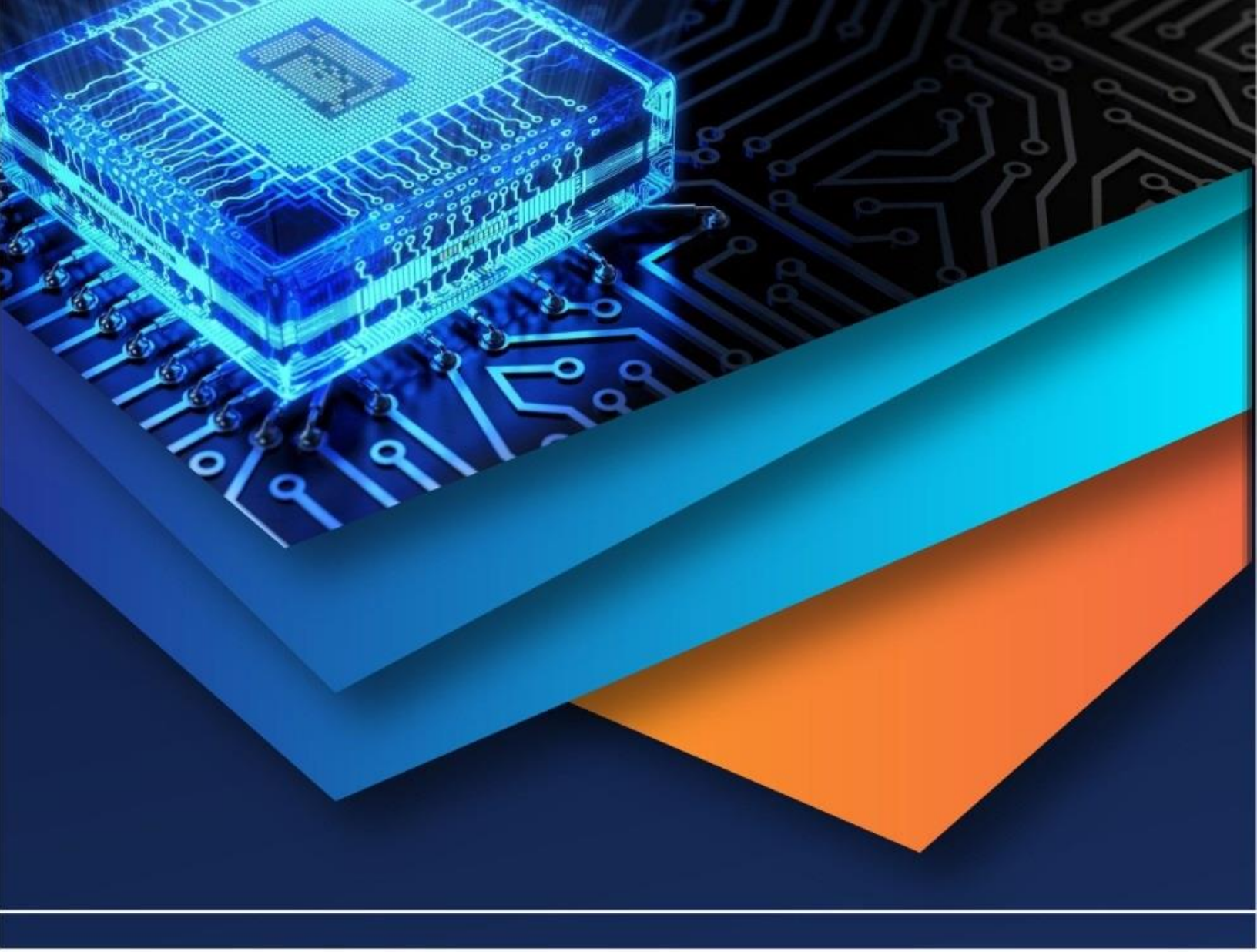
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