Unified Payment System Using Aadhaar Card

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ABSTRACT: The Aadhaar card was introduced by Unique Identification Authority of India(UIDAI).This paper describes the requirements and guidelines for the Aadhaar Card Payment Project, including the project implementation. Here, we have proposed to build an Aadhaar-Based Unified Payment Solution. The key idea is that a virtual wallet will be linked to the Aadhaar card number of the customer. As the aadhaar numbers were linked with the bank accounts the transactions can be made easily. As we are using the QR code scanner which scans the aadhaar card the transactions can be made in a secured manner. The main aim is to introduce a unified payment procedure using a **mobile application** because nowadays the aadhaar had become a mandatory in each and every sector of our country.

KEYWORDS:Aadhaarcard,Unified Payment Solution,QR code scanner,Transaction,Virtual wallet.

I. INTRODUCTION

OBJECTIVE
The main objective of this project is to introduce a unified payment system by using QR code scanner and firebase connectivity. This was designed in the form of **mobile app.**

PROJECT SCOPE
This paper is based on the payment system.Inorder to make a unified payment we have used aadhaar card which is now a mandatory one in all the sectors.Here we have used a scanner called QR scanner for the transaction process.All this process are stored in the firebase which is useful to retrieve the data whenever we need it.

OVERVIEW
Our ultimate goal is to introduce a unified payment process.First the customer have to login or register into their mail id to start their further transaction. The transaction can be made by scanning the customer QR code present in the aadhaar card using QR code scanner. After that the receiversaadhar card is scanned in the same manner. Next we have to proceed to the payment process where we have to enter the amount to be paid. It also contains an additional feature that we can refill the amount whenever we needed. The amount will be deduced from the bank accounts that are linked with the aadhaarcard.We use Firebase connectivity to store the details of each and every transaction and it can be viewed at any time.Atlast,the OTP will be sent to our concerned mobile number. By this project we have proposed an unique payment system throughout the country.

II. RELATED WORK

[1] Alex Roehrs, Cristiano André da Costa and Jorge Luis Victória Barbosa," A Model for mobile payment in ubiquitous commerce". This paper aims at presenting an architectural model proposal for a novel Mobile Payment System, called 4iPay. This work considers the following premises: independence of device, location, carrier and cardholder to meet the needs of executing payment transactions in ubiquitous commerce. Our proposal considers the convergence of concepts of ubiquity, unity, universality and unison to form the proposed model. This article describes the model, implementation, preliminary assessments and requirements for mobile payment in ubiquitous environments. We developed a prototype of 4iPay using Android smartphones. Our protoype was evaluated in three diferentescenarious

[2]Xiang Zhang1, Hangzai Luo1, Jinye Peng1" Fast QR Code Detection" Quick Response (QR) code is introduced by theDenso Wave in 1994. It can encode alphanumeric characters,a rich set of information can be made available through encoded URL addresses. Nowadays, with the rich development ofMobile Internet and Internet of Things, it is desired to havea quick and efficient QR code recognition method. However,QR code detection is not an easy job. In this paper, a set ofnovel approaches to detecting QR code in arbitrarily acquiredimages are proposed. The proposed method has been evaluatedwith arbitrarily acquired images. The experimental results showthat the proposed methods are effective way to detect QR codeposition.

[3]IJACSA"A Compendious study of online payment systems(past,present,future)development"This paper is aimed at evaluating the present status and growth of online payment system.

III. EXISTING SYSTEM

In the existing system the payment are done using aadhaarcard.In the scanning process of QR code they cannot get the details of the user automatically instead we have to enter the UID number manually.The payment procedure is done by verifying their finger prints as they are linked with the aadhaarcard.They do not provide any OTP for the transaction process,so that we may not be aware of the transaction.This leads to some of the security threats.

IV. PROPOSED SYSTEM

In this paper, we propose to build an Aadhaar-Based Unified Payment Solution. QR codes can be used for money transfer from the sender's Aadhaar card–linked virtual wallet to the receiver's Aadhaar card–linked virtual wallet. To address this issue we have designed in such a way that during the scanning process automatically it gets the users name and the UID number.After the payment process the OTP is send to our concerned mobile number.All these transactions details are stored in the firebase and it can be viewed at anytime.

V. SOFTWARE DESCRIPTION

FEATURES OF WINDOWS 7

Microsoft's Windows 7 released in 2007 and it was preceded by Windows Vista. Windows Vista was censured by numerous clients as a result of poor execution and long advancement time. In 2008, Windows 7 would be the official name of the operating system because of windows 7 features. The Top 10 Features of Windows 7 Operating System are User State Migration Tool,BranchCache, DirectAccess, User Account Control, Windows Troubleshooting Platform, AppLocker, Deployment Image Servicing and Management, Enterprise Application Compatibility, Problem Steps Recorder,Bit locker and Bit locker to Go

A)CLOUD DATABASE

FIREBASE: Firebase is a Backend-as-a-Service—BaaS—that started as a YC11 startup and grew up into a next-generation app-development platform on Google Cloud Platform.

Firebase frees developers to focus crafting fantastic user experiences. You don't need to manage servers. You don't need to write APIs. Firebase is your server, your API and your datastore, all written so generically that you can modify it to suit most needs. Yeah, you'll occasionally need to use other bits of the Google Cloud for your advanced applications. Firebase can't be everything to everybody. Firebase Storage provides a simple way to save binary files—most often images, but it could be anything—to Google Cloud Storage directly from the client!!!

Firebase Storage has it's own system of security rules to protect your GCloud bucket from the masses, while granting detailed write privileges to your authenticated clients.

B)FRONT END

CREATION OF ANDROID: Lets you express an application's compatibility with one or more versions of the Android platform, by means of an API Level integer. The API Level expressed by an application will be compared to the API Level of a given Android system, which may vary among different Android devices.

Despite its name, this element is used to specify the API Level, not the version number of the SDK (software development kit) or Android platform. The API Level is always a single integer. You cannot derive the API Level from its associated Android version number (for example, it is not the same as the major version or the sum of the major and minor versions).

ANDROID STUDIO: Android Studio is the official Integrated Development Environment (IDE) for Android app development, based onIntelliJIDEA . On top of IntelliJ's powerful code editor and developer tools, Android Studio offers even more features that enhance your productivity when building Android apps, such as,A flexible Gradle-based build system,a fast and feature-rich emulator,a unified environment where you can develop for all Android devices,instant Run to push changes to your ru,nning app without building a new APK,Code templates and GitHub integration to help you build common app features and import sample code,Extensive testing tools and frameworks,Lint tools to catch performance, usability, version compatibility, and other problems,C++ and NDK support,Built-in support for Google Cloud Platform, making it easy to integrate Google Cloud Messaging and App Engine

BACKEND:

MYSQL DATABASE: MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons,MySQL is released under an open-source license. So you have nothing to pay to use it.MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.

MySQL uses a standard form of the well-known SQL data language.MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.MySQL works very quickly and works well even with large data sets.MySQL is very friendly to PHP, the most appreciated language for web development.MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.MySQL is an open source relational database management system (RDBMS). It is commonly used for database services for other open source applications, such as Drupal and Wordpress.

1) HISTORY OF MYSQL

We started out with the intention of using the mySQL database system to connect to our tables using our own fast low-level (ISAM) routines. However, after some testing, we came to the conclusion that mySQL was not fast enough or flexible enough for our needs. This resulted in a new SQL interface to our database but with almost the same API interface as mySQL.This API was designed to enable third-party code that was written for use with mySQL to be ported easily for use with MySQL.

SqLite:

SQLite is an in-process library that implements a self-contained, zero-configuration, serverless, transactional SQL database engine. The source code for SQLite exists in the public domain and is free for both private and commercial purposes.

SQLite has bindings to several programming languages such as C, C++, BASIC, C#, Python, Java and Delphi. The COM (ActiveX) wrapper makes SQLite accessible to scripted languages on Windows such as VB Script and JavaScript, thus adding capabilities to HTML applications. It is also available in embedded operating systems such as iOS, Android, Symbian OS, Maemo, Blackberry and WebOS because of its small size and ease of use.
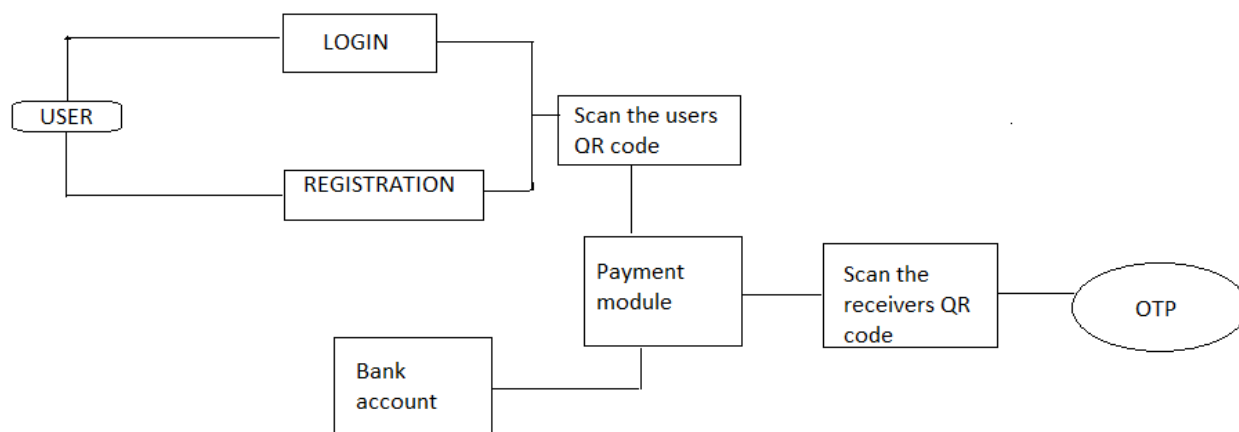
VI. ARCHITECTURE DIAGRAM

VII. MODULE DESCRIPTION

MODULES

- Authentication Module
- Firebase Database connectivity
- Sender QR Code process module(Aadhar card code)
- Receiver QR Code Process module(Aadhar card code)
- Virtual Payment Transaction Module

AUTHENTICATION MODULE: Here We can Create Login And registration modules , the Authorized users only access this application, the first user want to register with details in register page , the details will verified by server , then only User details will be stored in the backend firebase database

LOGIN MODULE: The Registration Users only can login, if valid user will be go to next activity, if not register users cant login with this application

FIREBASE DATABASE CONNECTIVITY: The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in realtime to every connected client. When you build cross-platform apps with Android, and JavaScript SDKs, all of your clients share one Realtime Database instance and automatically receive updates with the newest data.

CONFIGURE FIREBASE DATABASE RULES: TheRealtime Database provides a declarative rules language that allows you to define how your data should be structured, how it should be indexed, and when your data can be read from and written to. By default, read and write access to your database is restricted so only authenticated users can read or write data. To get started without setting up Authentication, you can configure your rules for public access. This does make your database open to anyone, even people not using your app, so be sure to restrict your database again when you set up authentication.

READ FROM FIREBASE DATABASE: To make your app data update in realtime, you should add a ValueEventListener to the reference you just created.TheonDataChange() method in this class is triggered once when the listener is attached and again every time the data changes, including the children.

SENDER AND RECEIVER QR CODE PROCESS MODULE(AADHAR CARD CODE): Systems and methods are provided for facilitating peer-to-peer payment transactions using mobile devices. In one implementation, a method facilitating a computer system to complete a peer-to-peer payment transaction using a mobile device is disclosed. The method comprises determining a financial account for providing funds for the payment transaction. The method further includes receiving a user input comprising a payment amount for the payment transaction, and generating a QR code comprising a representation of the payment amount. Additionally, the method comprises displaying the QR code on the display of one mobile device for purposes of scanning by a second mobile device. Apparatuses and systems for implementing the method, as well as for processing the generated QR code after it is scanned by the second mobile device are also disclosed.First the Sender Qr code scanned and get the values store into the database set the that card details,it also receiver code get the card details and store it

VIRTUAL PAYMENT TRANSACTION MODULE:A system loads, authenticates and uses a virtual smart card for payment of goods and/or services purchased on-line over the Internet. An online purchase and load (OPAL) server includes a virtual smart card data base that has a record of information for each smart card that it represents for a user at the behest of an issuer. The server includes a smart card emulator that emulates a smart card by using the card data base and a hardware security module. The emulator interacts with a pseudo card reader module in the server that imitates a physical card reader. The server also includes a client code module that interacts with the pseudo card reader and a remote payment or load server. A pass-through client terminal presents a user interface and passes information between the OPAL server and a merchant server, and between the OPAL server and a bank server. The Internet provides the routing functionality between the client terminal and the various servers. A merchant advertises goods on a web site. A user uses the client terminal to purchase goods and/or services from the remote merchant server. The payment server processes, confirms and replies to the merchant server. The payment server is also used to authenticate the holder of a virtual card who wishes to redeem loyalty points from a merchant. To load value, the client terminal requests a load from a user account at the bank server. The load server processes, confirms and replies to the bank server.

There is the sender want share amount to receiver ,first of all sender set the amount to send using Qr code via mobile number verifications the amount will transferred virtually one into another finally transaction details will be update the firebase server.

VIII. CONCLUSION

This method will help the users to do the transactions between Aadhaar–linked virtual wallets using email–id, mobile number or any other ID of the receiver and Qr code. This product will not only make shopping easier but also enable easy transfer of money between people. It will also remove the need to carry the debit card/ credit card always. An appropriate ceiling on the amount of daily transactions can be put to prevent losses due to theft. The proposed system have made a unique payment throughout the country.

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