RESEARCH ARTICLE

Mobile banking services using nfc

Rayan Anwar Mohamed Alawad[1*] and D.Mohammed Abaker Hussin[2]

Telecommunication Engineering Al Neelain University Khartoum, Sudan

A R T I C L E   I N F O

A B S T R A C T

Money transactions and payment issues has been considered the most important task in people life now a days. They always looking for enhancing their sustenance situation and asking in urging for the best technology performs their transaction and payment easy and save their money and time. So near field communication (NFC) is the optimum solution they need in this paper we utilize this technology and present a payment method and implementation will work perfectly in markets. our project consist of two android application one must installed in the customer smart phone and the other in vendor smart phone, PC contains the data base which has been written java language in form of tables involved the information of both vender and customer like ID, bank account number, phone number, the amount you want to transfer and your balance etc. the transaction process preformed via NFC technology and WIFI to establish the connection. Eclipse simulator has been considered as design environment and the project has been tested on both live and simulation environment and the result was successfully.

INTRODUCTION

Mobile banking services

Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or personal digital assistant. You can transfer your funds, verify your balance, pay your bills to provision of banking and commercial services associated with mobile device you can access your account and pay when ever where ever you are [1].

How NFC works

Near Field Communication (NFC) is a short range wireless communication technology provides safe connection between electronic equipment by enable devises can just be touched by the users of their devices to other ones has NFC feature to communicate with this technology merely the tow device are near to each other i.e. Around 20 cm theoretically (4cm is practical).

The perfect avail of the short transmission range is that it prevents eavesdropping on NFC-enabled dealings. NFC technology enables several innovative usage scenarios for mobile devices. Its working principle depends on the RFID technology which uses magnetic field induction to provide connection between electronic devices in close vicinity.

It has data transfer rate reach to 424kbps and operates at 13.56MHz. It can be conceder as a sophisticated version of Bluetooth and 802.11 and complementary for them with their long distance capabilities. In card emulation mode NFC devices can offer contactless/wireless smart card standard.

NFC technology enables the smart phones to take the place of the traditional credit cards in case of payment, transferring files and documents between phones and service discovery. [2].

Android platform

Android is an open source mobile platform provided by Google. [3] and it considered as a software stack for the mobile devices which includes an operating system it based on a modified version of Linux kernel, applications development framework the developers in this stage use the java programming language and the virtual machine called emulator to enable them to use the recourses, the runtime environment and library Every Android application runs in its own process, with its own instance of the Dalvik virtual machine. Dalvik has been written so that a device can run multiple virtual machines VMs efficiently. Android includes a set of C/C++ libraries used by various components of the Android system. The main core libraries are: Media Framework, Web Kit, SGL, OpenGL ES, Free Type, SQLite, etc.

THE METHODOLOGY

In this paper we designed an application enable users in markets to pay their bills via NFC technology from their bank account. Our method divided into two sections the first sections explain the process occurs in the customer side and the second one explains the process occurs in the vendor side. and the process happened in the whole design will be explained in figure (1).
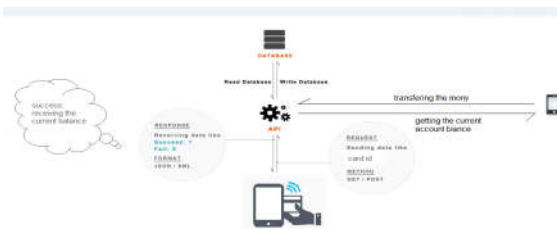
Figure 1 Shows the Over all Design

Simulation Setup

In this paper we simulate the applications in tow separate mobile phones and we will review the most important screens and its java files.
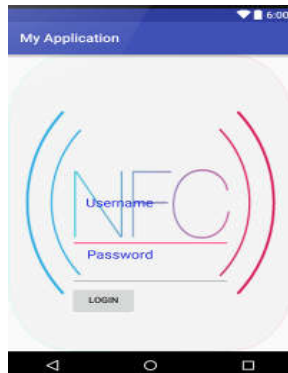

Figure 2 Login Screen

In this section we enable the customer to log in into our application with unique user name password.

Figure 3 the Java Cods for Login Screen

Figure 4 the Java Cods for Log in Screen

Figure 5 the Java Cods for Login Screen

In the second section we verify that if the device contain NFC or not if it has the transaction will start and information will pass to anther device if it not the transaction will failed figure (6) will show that.

Figure 6 Java Code for NFC Transactions

Figure 7 Java Code for NFC Transactions

Figure 8 Json Parser

In the third section we will show the JSON PARSER. It is a screen explains the ability of storage and getting the data from the database and figure (8) will show that.

RESULTS

Our application has been tested in the real life we after we setup it in the phones one of the act as NFC reader and the other act as customer phone and the PC as bank server and we get the results shown in figure(9) below .
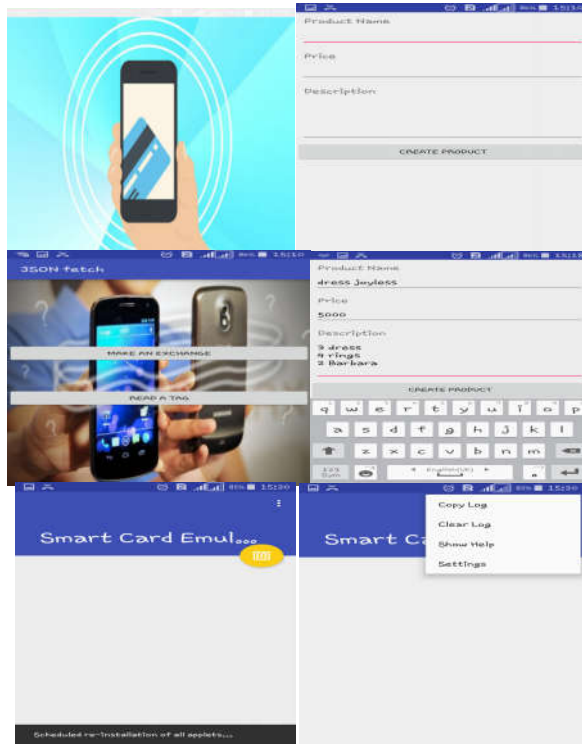

Figure 9

CONCLUSION

in this paper we present a method and implementation for mobile payment based on (NFC) near field communication technology that mean you can pay your commodity's bills instantaneously from your bank account via your smart phone within an android application installed beforehand in your mobile phone all you have to do determine the amount of funds you want to pay and other simple information .the application has been built by eclipse simulator to design the icons , screens ,and data base to represent the bank server and transferring manner is NFC . The findings is our way is firmly successful, secure and useful payment way.

References

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