

Employee Café Management System Using NFC

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Abstract : Near Field Communication is the latest technology which will change many aspects of everyday life in order to provide different solution to payment and ticketing where NFC could be utilized. NFC technology grown from RFID includes many RFID standard and standards for NFC tags. Smartphones usage have emerged a lot in the past few years. In this thesis, we offer the enforcement of RFID tags in the identification card which an NFC enabled Smartphone will identify.

The purpose of this research is to give a second opinion regarding the possibilities of m-payments through NFC and the barriers to overcome to make this a reality. Today there is a numerous amount of research done on the technical solutions of NFC but almost none is done on business solutions and managing online payments. Neither have the requirements and demands of the people been identified which is encourages us to research more on this technology. Therefore, the goal of this thesis is to investigate the current situation for all employees and to answer the question that where should the employee go next in the future in the situation of mobile payments through NFC. Further on, in this research, an event dealing with the subject of NFC has been attended to be able to find examples from the leading institutions in order to come to terms with what conditions and demands the different employees have on their possible payment related solutions, which is a key step for solving the issue of business payment models.

Keywords - Near Field Communication, Online Payment, RFID, Smartphone.

I. INTRODUCTION

Every person in the modern society has three things: a Wallet, a set of keys and a mobile phone. During the last decade people have started to use their mobile phone for more services than just talking or sending an SMS. They have started to use it to check their e-mail, surf the internet, as a GPS-device and many other things. The possibilities of mobile services are almost endless and service providers and users seem to be ready for more. By implementing one of the latest technologies within the RFID technology, the Near Field Communication (NFC), the possibilities can reach even further. A Radio Frequency Identification Tag is an electronic tag that changes data with an RFID reader through radio waves. RFID uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information. NFC is a short range high frequency wireless communication technology that enables the exchange of data between devices over about a 10 cm distance. It is an upgrade of the existing proximity card standard that combines the interface of a smart card and a reader into a single device. In this case our reader is an NFC enabled smartphone. NFC works in a similar way as with other wireless services available today in logistics, transportation and building access. What makes NFC interesting and differentiating from other contactless services is that it is designed to operate only over very short distances, less than ten centimeters. Wireless services are not a new thing and many people have been using it for quite a while. It is used every day when accessing a building or when using public transportation. Mobile Payments through NFC has been practiced among many sectors and there are many of them that are willing to adapt this technology. Employee Cafe Management System using NFC is designed to address the payment issues in organization from employee to café, so that organization can easily track and manage cafe services to employees.

II. Problem Statement

We bring to you user and budget friendly Employee- cafe management system using NFC. This system gives solutions to problems faced by canteens today through the use of technologies such as Mobile and Web applications which uses automation and device-to-device communication. This Employee café Management System accomplishes this by providing two interfaces for the two types of users in restaurants; an Android mobile application for customers and a web application for canteen employee members. The Android mobile application allows employees to have a seamless dining experience through NFC sensors, ordering dishes through an interactive menu, and being able to pay the bill from their NFC equipped phones.

III. Existing System

Online food ordering is a process of ordering food from a local restaurant or food cooperative through a web page or app. Much like ordering consumer goods online, many of these allow customers to keep accounts with them in order to make frequent ordering convenient. A customer will search for a favourite restaurant, usually filtered via type of cuisine and choose from available items, and choose delivery or pick-up. Payment can be amongst others either by credit card or cash, with the restaurant returning a percentage to the online food company. Another method using which we can order and pay online is using Sodexo. Sodexo as a company give out restaurant vouchers, meal passes, leisure passes, book cards, buying grocery and training voucher in the form of coupons to various companies and government authorities. These coupons are distributed, managed and processed solely by Sodexo Inc. Usually Sodexo coupons are given by companies or organizations where you work. Like one of my friend works for a MNC company in Bangalore and they used to provide employees with Sodexo coupons to buy food every month.

IV. Proposed System

The architecture of the system proposed, consist of two sides. First is the Canteen side which is basically an android smartphone owned by the staff of canteen. The Canteen side tap NFC card of employee to fetch employee details that requires internet connection. The second is the Admin side which is responsible for adding and providing NFC card to employees. Also admin can view transaction done by employee using NFC card. Canteen staff can take order from employee and can deduct particular amount in employee account using NFC card.

The software will contain two separate software connected to each other via a server. One part of the software will contain of a Webserver (or a webpage) and the other part of software will be an application on an android device which will be connected to webserver.

While the basic function of the Android Enabled Data Entry System is to provide a link between the employees and the system, there are also other features of the software as given below-

It allows an employee to login via his android smartphone and enter a new order regardless of where he or she is present.

It allows the owner of the company to have a look at the orders and enter special orders and also look at the graphs of the products sold.

It negates the need of physical files and hand written orders as all the work will be done on smartphones and computers.

No loss of data will occur as all the data will be backed up to a remote server. It will also restrict unauthorized access to the orders.

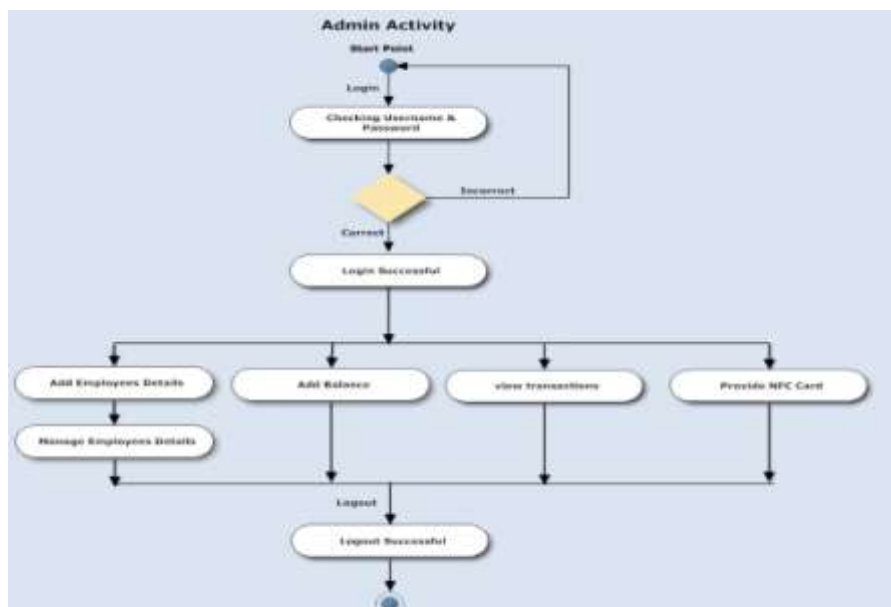


Fig 1: Proposed Flow Diagram

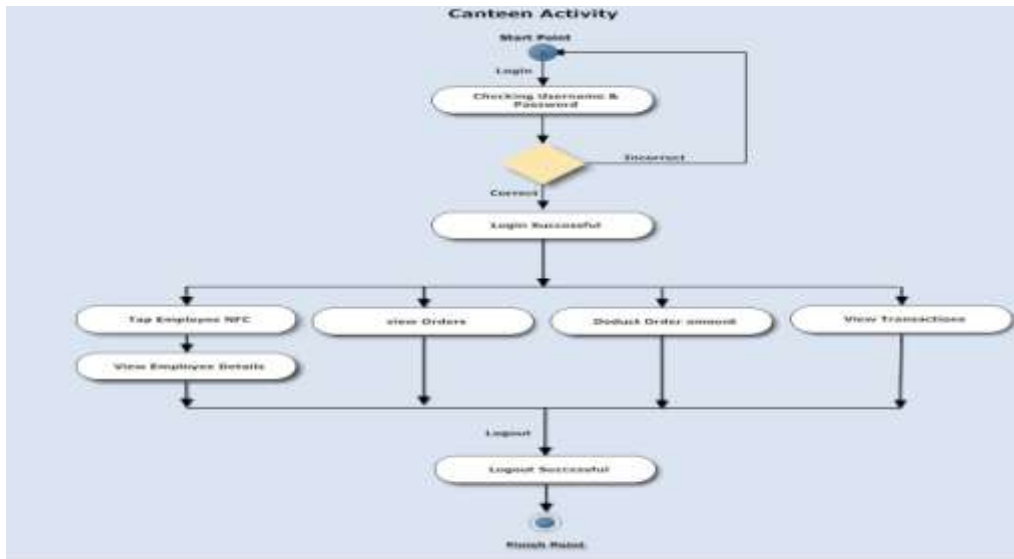


Fig 2: Proposed Flow Diagram

V. .Future Application & Scope

The purpose of this research has been to give a second opinion regarding the future possibilities of online payment solution. NFC chip and tags are quite small and light weight and contains all sorts of data available which makes them easy to use.

VI. Conclusion

This proposed project can provide a safe, secure and efficient way of payment to organization. In conclusion we can say that if this application works as expected then it can do wonder. It is a necessity for modern India and smart city project going on in India. The overhead of cash payment is eliminated. Hence by eliminating these things the service is faster than ever.

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