Employee Tracking System Using NFC

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Abstract - *This project is aimed at developing an NFC tracker system to monitor the location of every employee in the workplace that of importance to an organization. The system is hoped to help organization to increase the performance of the working environment among all the staff of the organization. Every staff will be provided with a smart ID with embedded NFC tag. Certain location at the workplace will be put an NFC reader to locate the staffs. This will ease the administration, manager or Principle to monitor their staff and to find their staff if they need the staff immediately.*

The location of the staff not be detected when employee go out from workplace and also waste the time when the administration, manager or bosses want their staff immediately. This project implemented is to ensure the employees current location effectively and to ensure the location of the staff whether the staff is in or out of workplace. This NFC Employee Tracker system contains three main elements in order to ensure that this project completes successfully, that is designing part, implementing part and deployment the devices (hardware and software); which are NFC reader, NFC tags, Graphical User Interface (GUI) and a database. In conclusion at the end is to build an effective system that automatically record and update location of the employee and to make the administration, manager or bosses to track the employee location in required immediately.

1. INTRODUCTION

The two major adopted to improve our daily routines so take our life more comfortable and easy. All major regulatory firms should try adopting these technologies to improve their quality of student and management.

Besides not being left behind in latest development, it will produce more quality and discipline graduates and they know to use advanced technology in the future. Location taking in Colleges should be done in more advanced method with using the latest technology. This Location Tracking System would be the best effective way to regulate the Location tracking in the regulatory Colleges rather the tedious manually Location tracking system.

As for system development and implementation, it should be able to help in managing their Professors Account systematically. The system must have database that contains employees information and it must be able to help lecturer to manipulate data, update database, alert manager accordingly, and also nice interface to make it easier to use. Finally, the Location Tracking system must be user friendly for commercial purpose.

1.1 Objectives Of the Project

Objectives of this employee NFC system is problems faced by college are time consuming manually location checking and very difficult to get the exact location of the Professor.

Our project is going to solve these problems by using NFC technology. Near field communication (NFC) is an automatic identification method, relying on storing and remotely retrieving data using devices called NFC tags or transponders. So the NFC is a wireless identification Normally the NFC system comprises of two main parts are NFC Reader and NFC Tag.

Near field communication (NFC) is one of the automatic identification technologies more in vogue nowadays. There is a wide research and development in this area trying to take maximum advantage of this technology, and in coming years many new applications and research areas will continue to appear. This sudden interest in NFC also brings about some concerns, mainly the security and privacy of those who work with or use tags in their everyday life.

In a developing country like ours, lot of latest technology that has been developed such as NFC, wireless, Bluetooth, robot and so on. Therefore, these technologies can be to ensure the employee time in/out, to track the location of the staff at specific location at workplace during work hour. This system also to ease the administration, manager or bosses to monitor and their employee immediately from the record in database besides building an effective system that automatically record and update location of the employee in real-time that will allow its manager, bosses or supervisor to see changes as soon as they occur, rather than waiting for updates to be visible at some later date.

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The purpose of this project was due to some problems that arise in a company which the manager, bosses or supervisor hard to monitor and track employee during working hours if they are not at their desk or cubicle. This system implemented because wasting time and energy for manager, bosses or supervisor to look around for the staff and this problem is not productive for big company beside hard to ensure organizational consistency.

1.3 Scope Of the Project

The scope of this project is divided into few main elements which are users, system operability, functionality and development tool User

a) Employee

In this system, user is allowable to register in this system and update their information in the system to enable the employer to track the registered employee.

b) Manager, bosses, Principle or supervisor

The manager, Principle, supervisor or bosses only allow searching employee, register, viewing data and Location of their employee.

c) Administrator

For the administrator, they are important user in this system because they allow adding, updating, deleting, viewing and searching the user in the system beside to search the employee location.
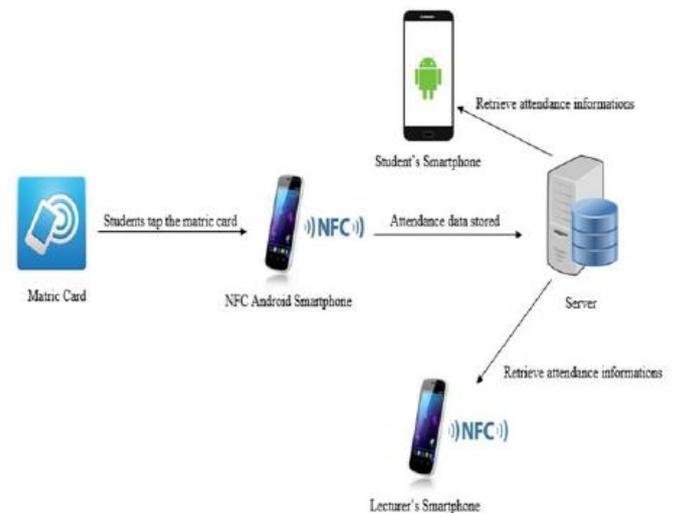
Diagram 1- NFC System.

3. System functionality

For the functionality of this system, the main function of the system is search location of the employee during work hour beside the employer or administrator to retrieve database such as add, update and deletion of each employee record besides records the current location, date and time accessed by the each user. User also allows registering and updating the information in the system.
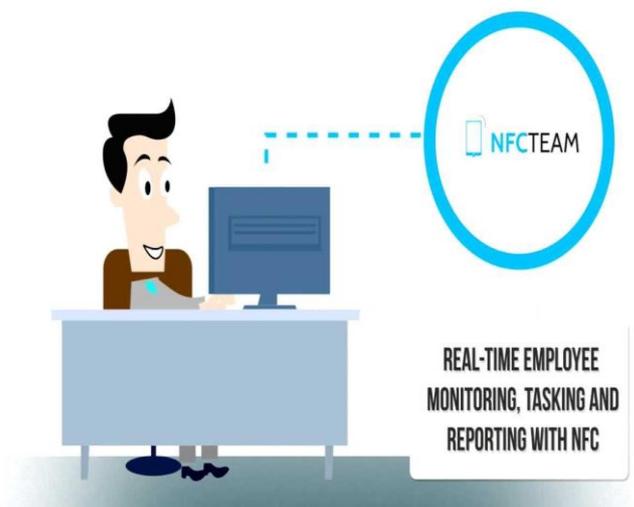
4. System operability

This system only works in range of the NFC reader. The employee tag will be detected by NFC reader and activate the employee card. NFC reader will read the employee information from NFC tag and display on the host computer and record the location of the employee. The database of the system will automatically update the employee location and manager/bosses or supervisor can view the location of employee.

Data collection/background study all data related to the NFC system is collected as the hardware and software appropriate to ape this system. For this NFC system Sql Server 2008 and Microsoft C Sharp is used in this NFC system. The data used are usually from books, journals and web sites.

Data analysis after collecting all data related to NFC, the data collection will be analyzed whether or not related to the NFC project. The aim is to identify data that can be used for the project.

5. Design

This process will involve software part (C sharp. NET, SQL Server 2008 and others software related). This involved software is important as we need to display the employee general information beside to store, add and update their required information and to take their Location tracking automatically.

Besides that, the analysis approach will help us to understand better on how to integrate between the user interfaces with the database and how it operates with each other. The software involved may be changed depending on the suitability and requirements of the system.

6. Testing

The component and the integrated entire are carefully verified to confirm there no error and fully meet the requirement. they normally a series of tests, which are run to check the performance of the software, and also to find if any new bugs were introduced into the system, after the previous bugs were fixed. If any more errors do exist, the bugs are fixed only to be retested.

7. Deployment

Deployment is about preparing the system or product for installation. The software is deployed after it has undergone thorough testing. Once the software has been deployed, in case the customer asks for any changes or enhancements, then the entire process is restarted.

8. Maintenance

Maintaining and enhancing software to cope with newly discovered problems or new requirements can take far more time than the initial development of the software. It may be necessary to add code that does not fit the original design to correct an unforeseen problem or it may be add more functionality and code can be added or making adjustment to the system or an individual component to change features or increase the performance.

9. CONCLUSION

The NFC Based Employee Tracking System could automatically detect the identities of the employees and will perform the Location Tracking. The system could automatically make a log of all the timings and as well as details of the employee. These will be the major achievements met in the project, among other objectives also achieved which include report generation part on daily and monthly basis and establish remote database connection. Reading items and objects in motion can be done accurately using NFC. A system developed with a log in windows enables security and the overall cost of implementing the system may seem high but after a year of running the system, very high benefits will be realized. The whole system is very convenient and saves much on time.

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