ANDROID APP DEVELOPMENT FOR CONTACTLESS SYSTEM

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Abstract- -Nowadays Smartphones are becoming more preferred desktops or notebooks and Tracking of a person for official purpose is a complicated task So The aim of this study to report an automated attendance system For Tracking Field Personals developed for use at Schools and official purpose. To ensure better productivity and result in field of tracking official work of field personals. The majority of attendance Systems are still conventionally done, which is tedious and time-consuming. To overcome the manual attendance issues, we proposed and implemented a smart attendance system with the aim to encourage the potential use of the Quick Response (QR). By using smartphones student/attendee scan QR code which will be displayed by the teacher/recipient. When attendee scan this QR code, automatically attendance will be marked according to the user id. It also discusses how the system verifies attendee identity.

Keywords- QR Code, attendance, Tracking, system, attendee.

I. INTRODUCTION

Need for tracking personals for official the purpose is to ensure that they execute their work properly in given time. The traditional way of tracking and taking attendance is by using pen and paper manually which is a very repetitive process. As new technology is evolving, there are various ways of tracking person for official purpose. But at the same time, it needs to weigh the pros and cons on the strategy employed in tracking them ensuring ethical practice is in place [1] [2]. It would increase productivity, in case of sales and service and provide timely services to the recipients. The purpose of the smartphone-based attendance system is to computerize the traditional way of recording attendance and provide the easiest and smart way to tracking and attendance. A QR code (an initialism for quick response code) is a type of matrix barcode (or two-dimensional barcode). A barcode is a machine-readable optical label that can contain information about the item to which it is attached. In practice, QR codes contain data for an identifier, tracker that refer to an application. [1] A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to store data efficiently; extensions may also be used. A QR code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera, and processed using Reed–Solomon error correction until the image can be appropriately interpreted. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image [2] [5] 2830, 2013. The purpose served through this app is to record the interaction of person with the recipients and get the details like location of interaction, time of interaction and duration of interaction with the fool proof mechanism. The interaction between attendee and recipient is recorded from a mobile app by scanning a QR code of the recipient. The attendee could be a sales person or student at sales point or at the organization attending a client the recipient, A Google sheet is used to keep the record of time, duration.[4]

II. LITERATURE SURVEY

There exist various modes of tracking system applications being used in various situations such as in schools and organizations for tracking and attendance. The most notable changes in most organizations landscape today are the capitalization of technology in tracking personals for official purposes and the attendance of students. Biometric based attendance systems like face recognition iris-based attendance system. Other attendance systems like RFID based are various techniques available in the market. But above techniques can be useful only within specific places which have to be owned. For tracking and recording attendance for field personals and the students. the above-mentioned automated attendance system techniques will not work out. Because of phones becoming compulsory to be carried by the personnel and teachers during their official work in the field, the smartphone could be useful for designing such systems. But here is no perfect solution for an automated attendance system for the organization. By using smartphone phones there are few systems which can achieve this objective. like One time password (OTP) is a common approach to verify by automatic process for checking whether a person is present at the given location or not executing a given task.

III.   **METHODOLOGY**

"QR Code Based Smart Attendance System for Tracking Field Personals" is a smartphone application created for taking attendance of the students and tracking of Field Personals on the regular routine. The system is divided into two parts: teacher/recipient module and student/Field Person module. Where recipient module is a QR code and Field Person module is an android application.[2]
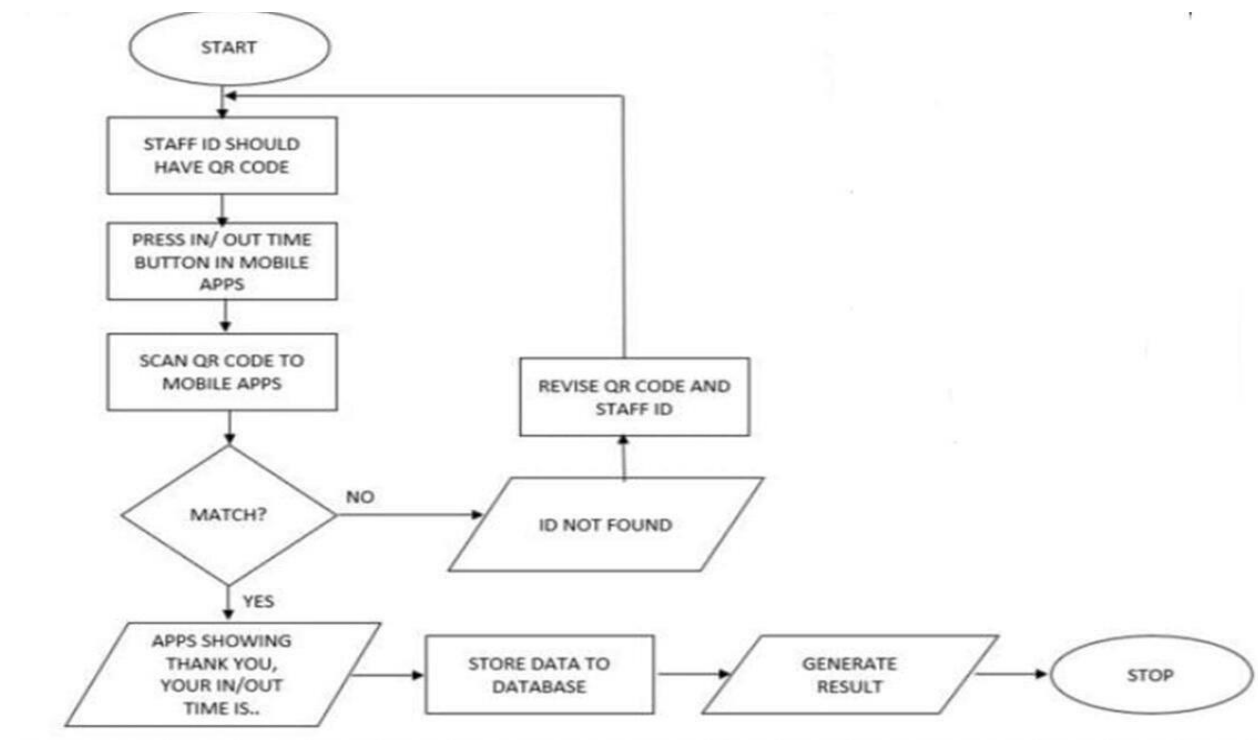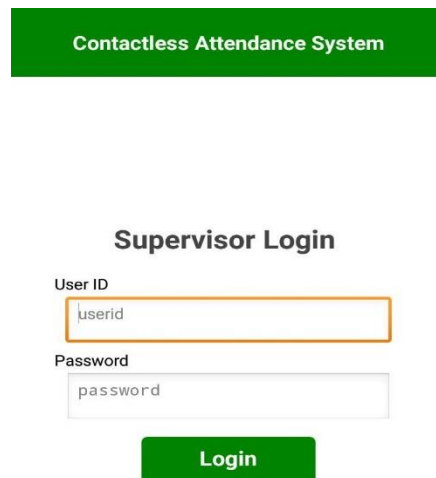

Figure.3.1 Flow chart

In figure 3.1 show the Flow chart process how the scenario will be played out. First the app to be used by recipient is loaded his/her Smartphone. When the app is opened for the first time ,the login process in the app involves getting user details like name, password. During the process, or at its beginning, the client required to display the QR image. the students or field person can then scan the displayed QR code using the smartphone application through the smartphone. the application will then send the information collected to the Google sheet to confirm attendance. The whole process should take less than a minute for any person to complete their attendance at a specific location. Smartphones may communicate with the Google sheet via either the local Wi-Fi coverage offered by the institution or through the internet. Mobile module scanner

for this proposed system running in Android OS for record attendance by scanning QR Code. To develop the mobile apps scanner interface, we use MIT Inventor and the integration of Android Barcode Scanner. While Google Apps Script is used for scripting mobile scanner apps to the database. The system will be able to verify staffs' identity using QR code given on each staff and recorded to the system instantly. Google Sheets are used for storing the staff data such as staff ID, name, In time, out time, time of working hours, overtimes and less time. The developed database contains all the information of staff attendance on a daily basis. By using the proposed system, the admin can monitor the attendance records by daily to monthly record for each staff member.
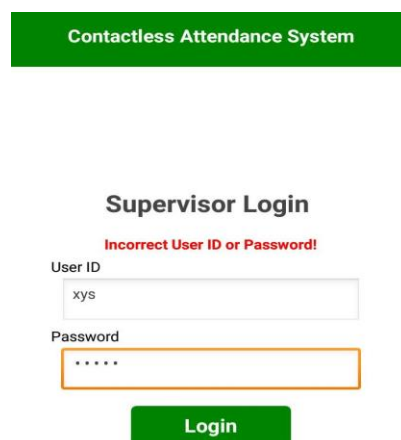
System implementation

The proposed implemented system shown in this paper. The required software used for development process of the QR codes scan MIT app inventor, Google Apps Script, Google sheets which requires an operating[6] system of Microsoft Windows 7 and Android Operating System 2.3 ("Gingerbread") or higher. The main activity for the system to work is the login of administrators or users. Thus, their login gives them access to the system as shown in figure no 32

Figure 3.2 Login

user needs to enter valid User ID and Password otherwise it will show "Incorrect User ID or Password" as shown in figure no 3.3

Figure 3.3

After Entering valid User ID and Password it will take the user to the next window as shown in figure no. 4 where It will ask the pupil to hold the ID in front of the device camera this screen
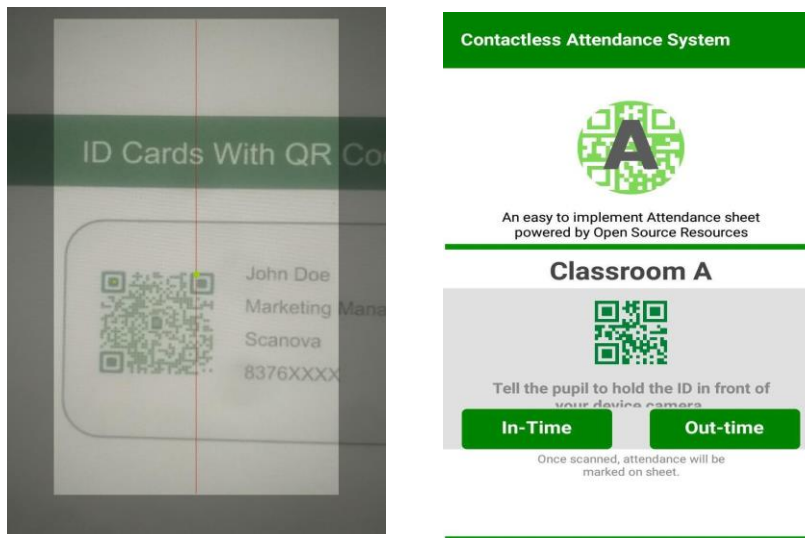

Figure 3.4

will have two buttons: 1st for In-time and 2nd for the out-Time. In next step user needs to tap on In-time or out-time button according to the need and scan the ID card which has Or code to mark the attendance as shown in figure no. After successfully scanning the respective In-time will be updated in the Spread sheet as shown in Figure 3.6

Figure 3.5

The attendance spreadsheet receives the data from attendance provider app which contains authenticating IDs go location if it Qr code matches it registers a entry in the database. The entries of the timestamp of personal and In-time interaction, out-time interaction entered against the row field of the official field person in the Spreadsheet. This process will happen within one or two minutes since the request is generated from the attendance app. Each registered personals or students will have a new row field entry in the database table with date wise column entries and Report can be generated which could bring useful data for statistics information.

IV.   IMPLEMENTATION AND RESULTS

The mobile app has developed using MIT App Inventor [1] is an open-source app-building platform that allows users to drag-and-drop visual objects to create an application that can run on the Android system A QR code generating library is used in attendance spreadsheet for generating QR code on request by attendance App.

Availability

The App will be available 24x7, as it will be a mobile based portal.

Maintainability

The system would be maintainable to a very good extent since there are not many of the hardware devices. The system is solely based on internet connectivity, and Spreadsheet has to be maintained against attacks and has to be dynamic in nature, where they can be Changed.

Portability

The system is fully portable since the only requirement is internet connectivity. Also, the Spreadsheet is responsive and works well with mobile, desktop PC.

V.   CONCLUSION

The developed system presented in this paper has been successfully designed and tested. The student's attendance status will be analyzed and exported. The attendance monitoring system is very important in our daily life. It possesses a great advantage, among the whole types of code scanning technology, QR Code Based Contactless Attendance System is the most accurate. In this paper, we have given an introduction to the Attendance monitoring system and its advantages. It is an efficient method to store attendance on the smartphone rather than wasting paper.

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