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Smart Android App for Library Footfall

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ABSTRACT

Traditionally, there is one system for library footfall analysis is that when students enters into library then he/she has to written down its name, id and entry time in a register. It is hectic to analyse this register to librarian. The android app will make it easier. Student have to login in this android app by using barcode-ID. Scanning the barcode of library via android app will record entry and exit time of students. The application of barcode technology in library entry register can be very effective and efficient due to its reliability, speed and accuracy. Visitor footfall analysis plays important role in the accreditation of colleges. This system is useful in libraries where visitor have unique ID in the form of barcode.

Keywords : Firebase, Barcode Scanner, Library Register

I. INTRODUCTION

Every Library maintains a register to keep track of visitors who visit library. The names, date and entryexit time are recorded in register. This record is helpful to analyze the footfall. Especially in colleges or universities footfall analysis is important to know how many students and faculty members visited library, which section is most preferred by visitors. This information is one of the factor considered at the time of accreditation of colleges.

Everyday library manages a register which records entry and exit times of students.These records are important for analysing how many students visited library.When student enters library it scan library barcode by using android app. After scanning library barcode information can be stored in database and this records maintained by admin. When student leaves the library it again scan the library barcode and exit time recorded. With the help of this information library footfall analysis will be easy.

II. EXISTING SYSTEM

Libraries maintain a register to record the visitor's name/ID, entry and exit time of visitor. Such recordkeeping is necessary to analyze footfall of library but, the manual method of maintaining handwritten register is vulnerable to human errors and footfall analysis is hectic.

III. LITERATURE REVIEW

A) Student Smart Card using VB.NET, SQL, Barcode Smart cards is used worldwide nowadays; it is popular due to its portability and ease of use. Currently smart cards are used in various sectors but not used mainly in college sectors. This paper discuss aims developing of an advanced system for students which can be used in attendance management, canteen payments, library management and office work using smart cards which can be used in educational institutes. In this paper the way to merge different applications together in one smart card is discussed. Thus,the person needs not to

carry different cards for various purposes. The person can carry one single card and can use the same card for various purposes. The architecture of proposed system in this paper contains different modules like canteen, library and attendance.

B) QR Scanning Code for mobile app

QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode first designed for the automotive industry [1]. Today the QR code is widely used in all industries. In our paper we present an implementation of an Android device using libraries and combined algorithms in order to be able to scan any QR code fast accurate and easy. The devices that we targeted for our application are the Google Glasses and an Android operated phone. The implementation for each of the devices was slight different, but the core algorithms and libraries were the same.

C) Student Authentication and Verification System using Barcode Scanner

In this paper, we are introducing a web application to enable students to access the college facilities through a barcode reader. In today's world, technology in growing at a very fast pace and transformation has become a necessity in every field to make productive use of technology. Barcode technology is a replacement for the traditional keyboard da entry. This is a web based application which integrates all the services of the library and central computer center of the college, which also enable the students to access the library and central computer center in most advanced way. This application aims at reducing the manual work and eases the work of the student in the most efficient way.

IV. PROPOSED SYSTEM

In this paper we have used the Kotlin language for android app development. Proposed system consists of only software part. Footfall analysis Android app include following parts:

A. Login

Students have to install android app in his/her android phones. Students will login in that app by using their ID barcode and generating password and ID.

B. Scan Barcode

With the help of footfall app students have to scan library barcode at entry and exit respectively. By scanning barcode the records of students will be stored in database.

C. Select Section

After scanning the barcode students have to select section like journal, internet, reading hall in the android app.

D. Logout

After scanning the library barcode at exit student will logout from app.

E. Admin:

Admin will access database and analyse the information.

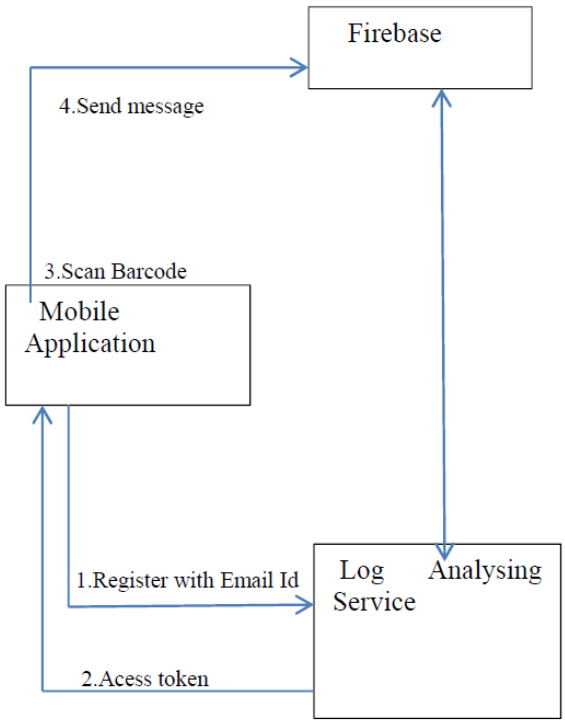


Fig 2 : proposed system for smart android app for library Footfall analysis

V. TECHNOLOGY USED

1.HTML : HTML stands for Hyper Text Markup Language. It is combination of Hypertext and Markup language whereas hypertext is the link between the web pages and markup language defines the text document within tag which defines the structure of web pages. This language is used to design of web pages. This language is used to make notes for computer text so that a machine can understand it and manipulate text accordingly. It is human readable language. HTML uses tags to define what manipulation has to be done on the text. This markup language is used by browser to manipulate text, images and other content to display it in required format. HTML was created by Tim Berners-Lee in 1991. The first version of HTML was HTML 1.0 .The standard version HTML 2.0 was published in 1999 [5].

2. CSS: CSS stands for Cascading Style Sheets. It is a design language which simplifies the process of making web pages presentable.CSS manages the look and feel part of web page. This language enables us to control the color of text, style of fonts, the spacing between paragraphs, how column are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as variety of other effects [6]. It provides control over the presentation of HTML document. CSS is easy to learn and understand. CSS is combined with markup language HTML or XHTML.

3.PHP: PHP is an acronym for Hypertext Preprocessor. It is an open source scripting language. PHP scripts are executed on servers [8]. It is deep enough to run the largest social network. PHP code is executed on the server and the result is returned to the browser as plain HTML. It is used to manage dynamic content, databases, session tracking, even build entire ecommerce sites.

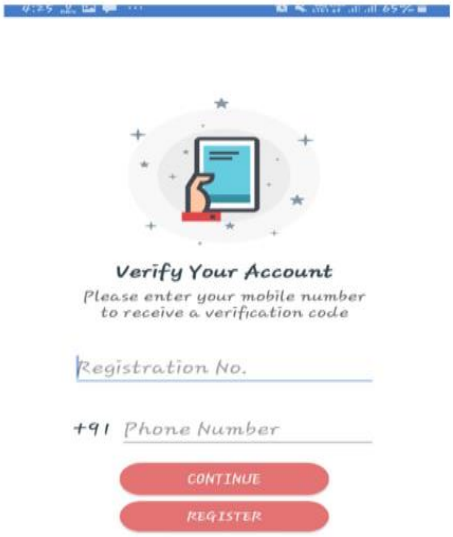
4. Firebase: Firebase Real-time Database is a cloudhosted database that supports multiple platforms Android, iOS and Web [9]. All the data is stored in JSON format and any changes in the data, reflects immediately by performing sync across all the platforms & devices. This allows us to build more flexible real-time apps easily with minimal effort.

5.Kolin Kotlin is a cross-platform, statically typed, generalpurpose programming language with type inference. Kotlin is designed to interoperate fully with Java, and the JVM version of its standard library depends on the Java Class Library, but type inference allows its syntax to be more concise.

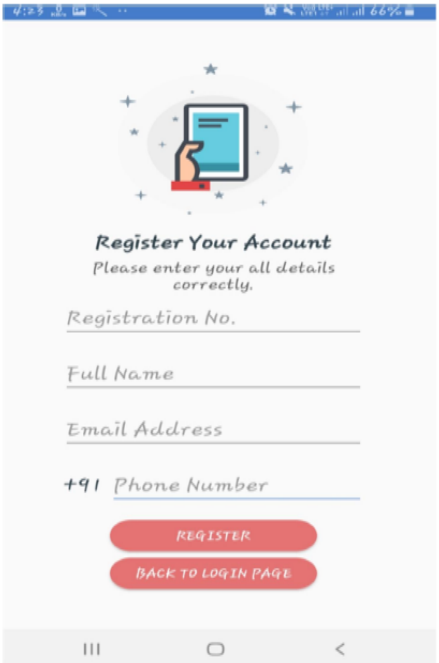
6. QR code A QR Code is a two-dimensional barcode that is readable by smartphones. It allows to encode over 4000 characters in a two dimensional barcode. QR Codes may be used to display text to the user, to open a URL, save a contact to the address book or to compose text messages. "QR Code" is a registered trademark of DENSO WAVE INCORPORATED.

VI. IMPLEMENTATION DETAILS

1. login page

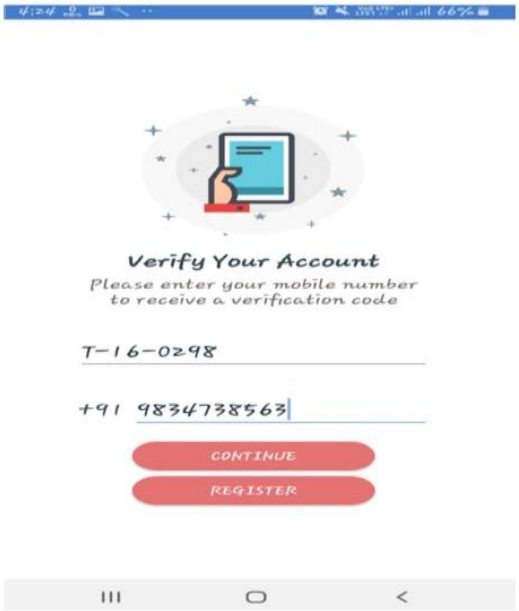


2 Register page

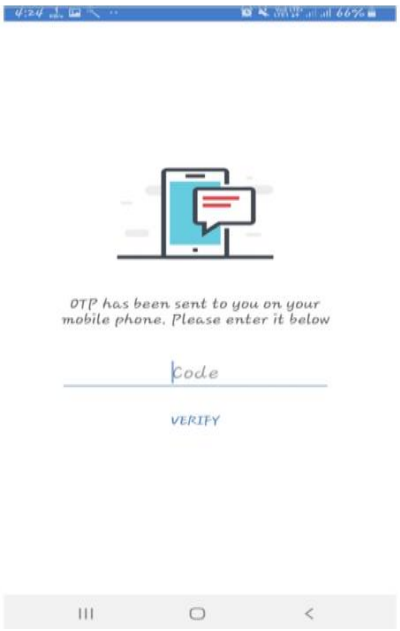


3. Registration

4.Verify account

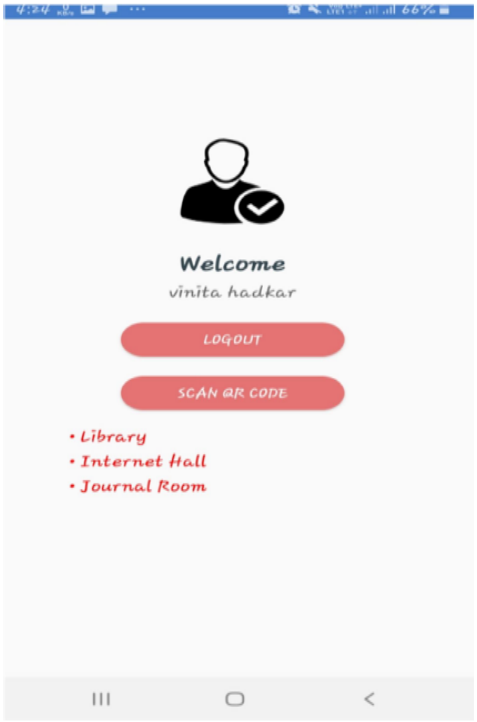


5. OTP page

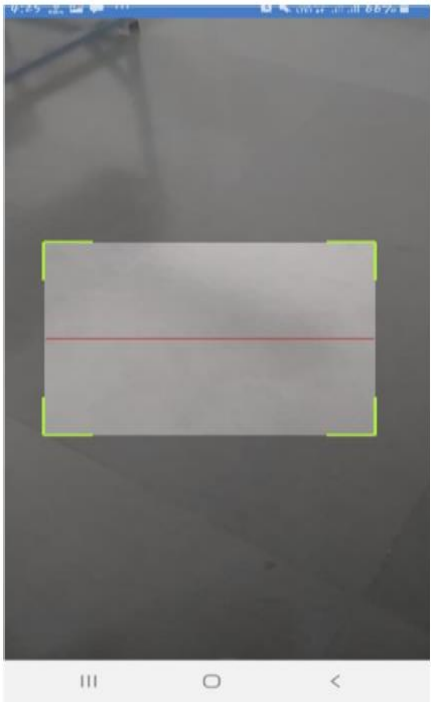


6.OTP sent

7.Welcome page

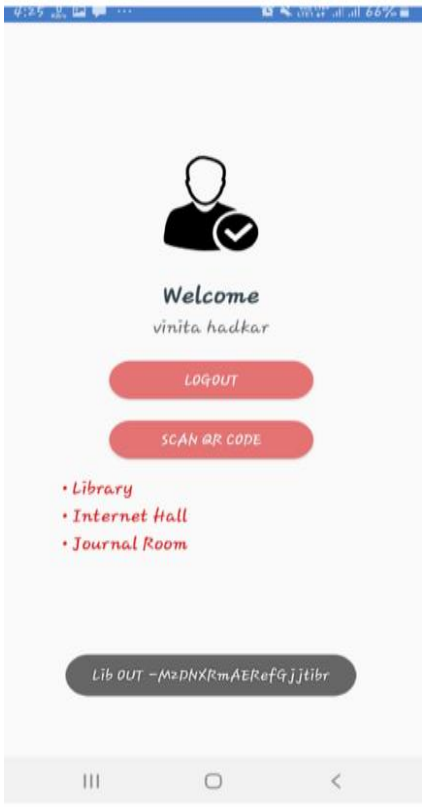


8.Scan barcode

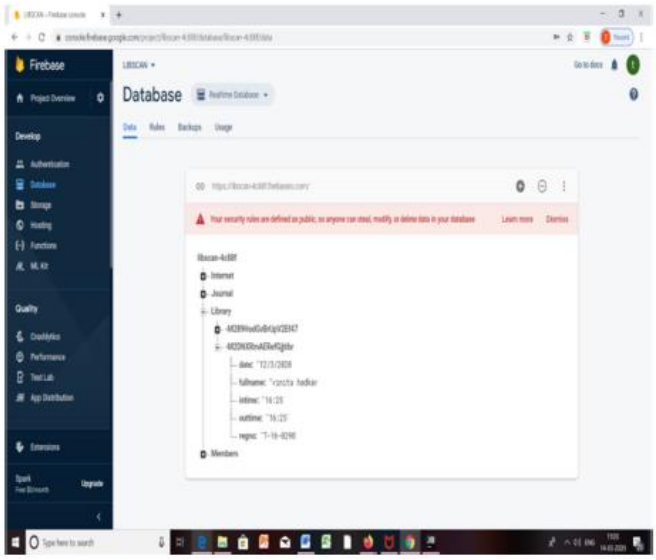


9.library Session start

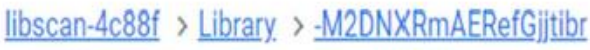
10.Session end

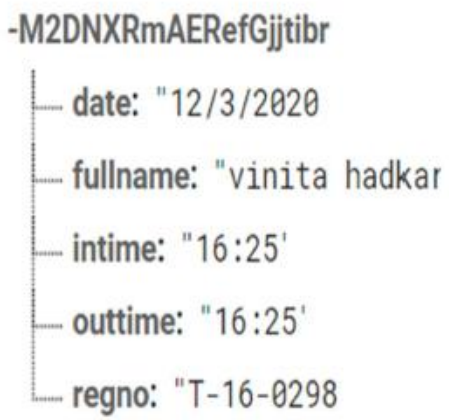


11.Database



12.User data





VII. CONCLUSION

Smart android app for library footfall analysis will make traditional library system smart. This smart system requires less time for manual work. The proposed barcode based library register can be used for recording and analysing footfall count in library efficiently. This system combines advantages of different technologies to overcome limitations of existing system.

VIII. REFERENCES

[1]. Harshada Chaudhari, "Raspberry Pi Technology: A Review", International Journal of Innovative and Emerging Research in Engineering Volume 2, Issue 3, 2015

[2]. Valeriu Manuel Ionescu, "The analysis of the performance of RabitMQ and ActiveMQ", 2015 14th RoEduNet International Conference - Networking in Education and Research (RoEduNet NER)

[3]. Akshatha M., Alankrutha K. P.*, Janitha Annet G., Lavita Monteiro, Smitha V. George, "Student Authentication and Verification System using Barcode Scanner", International Journal of Internet of Things 2017, 6(2): 71-74 [2]

[4]. Clement Creusot, Asim Munawar, "Real-time Barcode Detection in the Wild", 2015 IEEE Winter Conference on Applications of Computer Vision

[5]. Maciej Rostanski ; Krzysztof Grochla ; Aleksander Seman, "Evaluation of highly available and faulttolerant middleware clustered architectures using RabbitMQ", 2014 Federated Conference on Computer Science and Information Systems

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