IJIRCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Issue 5, May 2023

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.379

International Journal of Innovative Research in Computer and Communication Engineering

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 5, May 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1105326 |

QR Code Based Attendance System

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ABSTRACT: Smartphones are becoming more preferred companions to users than desktops or notebooks. Knowing that smartphones are most popular with users at the age around 26, using smartphones to speed up the process of taking attendance by university instructors would save lecturing time and hence enhance the educational process. This paper proposes a system that is based on a QR code, which is being displayed for students during or at the beginning of each lecture. The students will need to scan the code in order to confirm their attendance. The paper explains the high level implementation details of the proposed system. It also discusses how the system verifies student identity to eliminate false registrations.

KEYWORDS: QR Code; Attendance System; Educational System; Android.

I. INTRODUCTION

Taking students' attendance by university instructors during each class is a time consuming process especially when classes are big. Some faculty policies require this task to be performed by the instructor in each lecture. In other words, out of the total hours that are assigned to a given course, which is typically forty-five hours per semester, up to eight hours may be lost to perform this process that usually takes around ten minutes per lecture. Statistics in shows that 42% of smartphone users have an average age of 26 years old.

Thus, with the widespread of smartphones among university students, this paper addresses the problem of such a waste in the lecture time and proposes a system that offers to reduce it by almost 90%. The proposed solution offers a QR code for the students to scan it via a specific smartphone application. The code along with the student identity taken by the application will confirm the students' attendance.

This way, the system will save not only time but also efforts that were supposed to be put by instructors during each lecture. It will speed up the process of taking attendance and leave much time for the lecture to be given properly. The proposed system also takes care of preventing unauthorized attendance registration using multi-factor authentication. That is, it considers "Something you know", "Something you have", and "Something you are" to confirm the student identity.

II. LITERATURE REVIEW

The proposed system is web based which will be fully responsive and the user can use it in their mobile, tablets and computers. The records will be kept safe and secure and the attendance information of students of all the classes can be accessed easily.

Describing workflow Develop a QR code generator android app using the details of student such as roll number, student ID.which will help in Providing an easiest and smart way to track attendance in institutions.

This project conducted based on the new proposed of software development methodology called PIID which is the combination of Prototyping model and also Iterative and Incremental Development.

Currently the whole app is developed in Android. All the end users can access the system through the android app. A particular QR code will be displayed in the student's app via particular Link. Respective class teacher has to scan the

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QR code from the app after entering in the class and while leaving the class to get attendance. The time in and time out of every student will be recorded in the database.

We used 'ROOM' as a middle-ware to store and retrieve data from the database. The android app will post request to the ROOM and that particular ROOM code will process the query and store or retrieve the data according to the query and give back response in json format to the app.

We used json for sending and receiving of data from the server. As json is very light weighted and easy to parse. The ROOM code will send Responses in json format which will be parsed in the app for getting the data

III. SYSTEM DESCRIPTION

This section describes an adapted methodology for building a Smart QR Based Attendance system. The block diagram of the Smart QR Based Attendance system shown in Fig. 1.

Fig. 1 The block diagram of the Smart QR Based Attendance system.

The system is divided into two sections:

1. Hardware section
2. Software section

Hardware Requirements

- Processor : Intel Core i3/i5, Pentium 4, 2 GHz and above
- RAM : 8 GB
- Disk : 10 GB

Software Requirements

- Front end : Android studio
- Back end : SQL Lite
- Operating system : Windows 7-11/Linux

SDLC :

Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software's. The SDLC aims to produce a high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates. SDLC is a process followed for a software project, within a software organization. It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.

Building or Developing the Product - In this stage of SDLC the actual development starts and the product is built. The programming code is generated as per DDS during this stage. If the design is performed in a detailed and organized

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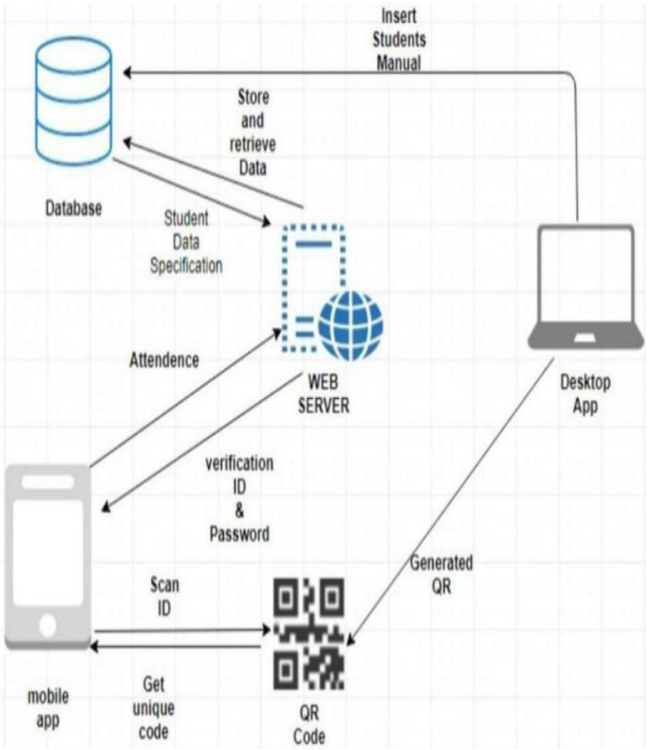
manner, code generation can be accomplished without much hassle. Java programming languages is used for coding and Android studio is used as IDE as we are developing android application.

System Architecture:

A system architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. A system architecture can consist of system components and the sub-systems developed, that will work together to implement the overall system.



IV. CONCLUSION

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This project proposes a" QR Code Based Attendance Management System" to keep track of the attendance of school and college students digitally. Its features include rapid attendance marking using QR code which works withing a millisecond. Unique QR code of each student is scanned and saved in database of attended students. It shows the list of students whose attendance has been marked. It has the option to visit college webpage within the application. Currently we have been testing the app in our SITS institution only. The project's scope is to extend it for other institutions as we add more features.

V. FUTURE WORK

We are looking forward to add more features like option to add custom subject attendance, a student login which enabled to monitor his attendance, etc. Once the app is fully tested and with added useful functionality, we plan to talk to neighboring colleges regarding the implementation of Smart Attendance System using our application. We aim that by next year most of the colleges and schools in our city will use Smart Attendance Application for monitoring attendance.

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APPLICATION:

Some of the applications of the model are mentioned below :

- Development of a SMART QR CODE BASED ATTENDANCE SYSTEM.
- Monitoring attendance and granting access to authorized users is very important in places like educational institutions. It is necessary that only authorized users have access to a certain location or area to which they are granted access.
- Analyzing the attendance on weekly and monthly basis.
- Unique QR code of each student is scanned and saved in database of attended students. It shows the list of students whose attendance has been marked

REFERENCES

Gurlove Singh, Rohit Dwivedi, Abhineet Anand Galgotias University, Greater Noida, India. "Attendance monitoring and management using QR code based sensing with cloud based Processing" Volume 8, Issue 5 (September 2019) Peng-Cheng Huang 1,2 Chin-Chen Chang 2 Yung-Hui Li 3 Yanjun Liu Peng-Cheng Huang 1,2 Chinhen Chang 2 Yung- Hui Li 3 Yanjun Liu Jun Lio, "Attendance Management System using a Mobile Device and a Web Application", Department of Socio-informatics, Faculty of Letters Chuo University 742-1 Higashinakano, Hachioji-shi, Tokyo 192-0393, Japan, 2016.

"QR code integration with Android" [Online]. Available: https://github.com/zxing/zxing

M. Man, W. A. W. A. Bakar, and M. L. Puniran. "e- Kehadiran: A Malaysian Model for Controlling and Monitoring Student's Absence Misconduct Via Online," International Journal of Computing and Corporate Research IJCCR, India, pp. 1-15

INNO SPACE
SJIF Scientific Journal Impact Factor

Impact Factor: 8.379

doi cross ref

ISSN INTERNATIONAL STANDARD SERIAL NUMBER INDIA

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