

Attendance Analysis and Maintenance of Student Information Using QR Code.

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Abstract— *In our day to day life the smart phone plays very major role. In this new world the Smartphone is useful to get easy and instant result of problems. Various app like problem solving app, education and marketing app, social app this app made our life colorful. For solving the problem of the attendance data we used this technology. The projected technology is a pair of two applications, one is for generating attendance list and other is for generating QR code for student and also the QR code of this application contain the two types of details one is student details and second is attendance details in XLS Format. To confirm the attendance of student teacher needs to scan the QR code of that particular student. The proposed application deals with the eliminating the false registration, authenticate the student identity, and also with the management of all student attendance. The student scans the QR code which will be provided by professor for mark the attendance. As per the subject the professor marks the attendance of class student. The report of student attendance generates excel sheet for the future use. In this paper, by using the basic information of student we manage the student record by creating profile of student and update respective profile concurrently. This is an efficient profile management system which reduces the problem of wastage of time and paper.*

Keywords— *QR code, Micro QR code, Attendance analysis, DFD.*

I. INTRODUCTION

The Quick Response (QR) code was developed by Masahiro Hara in 1994 from a junior of the Toyota car company, Denso wave. In 2000, QR code recognized as an international standard by the International Organization for Standardization (ISO) [1]. To overcome the limitation of traditional bar code this QR code is use. It is the easiest way to scan and captured the any form of angle by using it. For scanning of QR code we will use our device or app so that the scanning takes a less time and it is the possible easiest way. QR code represents the type of matrix barcode which is a machine readable that control the data about the linked item. QR code consist of black squares arrange in a white background in a square grid form. It can be scan by imaging device as well as camera. The purpose of this application is to convert the traditional way of recording attendance in computerize way. The smart phone attendance system provide smart and easy way to track attendance [1]. For taking attendance in our application every student has unique QR code it takes attendance as per the dates by scanning the QR code in front of the device camera. Provided every QR code to student is with the unique id. The application stores the attendance record of all student and it generate the excel sheet of attendance record for us. This application is useful for taking a daily attendance in school and college.

The unique QR code which is with the student used for confirming the attendance and it reduced the problem of such a waste in lecture time and paper. In this system it will not only save the time but also save the paper work and to take attendance properly for any particular lecture. In this app it will protected the unauthorized attendance registration by using multiform verification [1].

Student profile attribute

1. Student Name
2. Contact details
3. Email Id
4. Department
5. Address
6. Year

1. Student Profile: -After completing a registration of student profile that profile will work like an id card for student.
2. Assigning the code: - The application generates unique QR code automatically for every enrolled student.
3. Registration Complete: - The registration phase gets completed, after assigning the code. And the data of registration get stored in the database.
4. Authentication: - This module provides security to user and only authorized user is able to call the module and access the information.
5. Verification: - This module is used to verify student information from database.
6. Updating: - This module cannot be accessed by any student. Only the administrator has the authorization to update the database [3].

II. PROPOSED SYSTEM

2.1. Methodology

The following method has been used for reaching to the goal of application:

- By using student details like Name, Email id, Branch, Year, this android application provide unique QR code to all student.
- Add all the details in that unique QR Code.
- With respect to the exact subject this application take attendance and generate the attendance sheet with the details of student attendance [1].

2.2 FLOWCHART

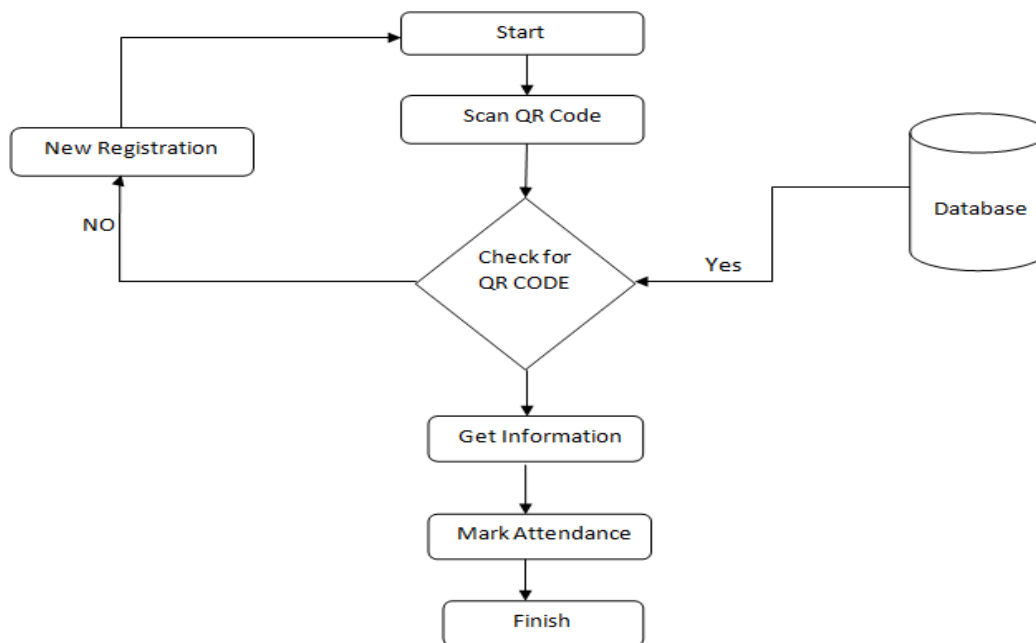


Fig.1: Flowchart for attendance analysis and maintenance using QR code.

2.3 Data Flow Diagram

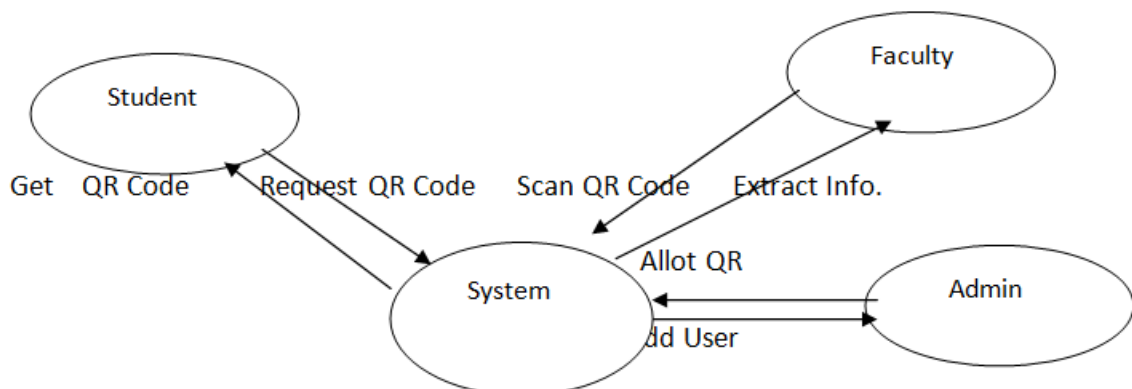


Fig.2: Data flow diagram

2.4 Database

The database of student attendance is managed using MYSQL. The database stores subject's names, codes, student's name, and attendance status. The database table is shown in below:

Row	Date	Student Name	Subject	Attendance
1	17	Shaheen	Thursday	Present
2	18	Shaheen	Monday	Present
3	19	Shaheen	Monday	Present
4	20	126		Present
5	17	8		Present
6	18			Present
7	19	126		Present
8	14			Present
9	15			Present
10	16	116		Present
11	12	116	Saturday	Present
12	21	129		Present
13	22	136		Present
14	23	136		Present
15	24	6051424		Present
16	25	136		Present
17	26	138		Present
18	27			Present
19	28	163		Present
20				Present
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Fig.3: Excel sheet of attendance analysis

III. MICRO QR CODE

We are familiar with standard QR code and micro QR code. Micro QR code is a smaller updated version of it. Micro QR code are smaller, internally as well as physically so it's much harder to notice. Storage capabilities that is size is the biggest difference between a micro QR code and standard QR code. Micro QR codes contain 35 characters but a traditional QR code can handle about 7088 characters. All this difference shows us how much image size matters if it comes to the amount of information that can be stored in a particular code. Standard QR code can hold three position detection patterns while Micro QR code only has one pattern and this pattern heavily affects on reading scanning of QR code.

Here is the data capacity scale for Micro QR Codes:

- M1. Number of Modules= 11
- M2. Number of Modules= 13
- M3. Number of Modules= 15
- M4. Number of Modules= 17[5]

Micro QR Codes are smaller than regular QR codes so they cannot hold approximately as much data. This code has a benefit for better transferring of small amount of data such as phone number or website's url. Micro QR code is mostly used in magazines, business card or websites and this QR code designer needs their code to be short and sweet. The micro format has to be operated where it will be observed and have an impact on the scanner. Micro QR code may not have any option for editing and adding more information of micro over standard QR code.[5]

Micro QR codes are a smaller version of QR code which is used to store small amount of data, it is designed to provide smaller surface area for storing small amount of numerical data. Their future use is on objects where physical surface area is a limiting factor. When micro QR code is compared with regular QR code, regular QR code uses definite amount of area as position detection patterns are situated at three different corners of a symbol where micro QR code uses only one position detection pattern. Also regular QR code needs minimum four-module wide margin around a symbol while Micro QR code needs only two-module wide margin. This way micro QR code is more efficient than regular QR code which allows Micro QR code to take even printing area smaller compared to regular QR code. [4]

IV. WORKING OF QR APPLICATION

The graphical user interface of our project is shown in below; here QR is our application name. Firstly, login our application with user id and password if it's not then click on new registration. Then select roll of the user like Admin, Teacher, and Student and fill other login details. After that home page will open, in that page for taking attendance click on mark attendance and for checking attendance click on view attendance button.

To generate QR code user need to select branch and year then click on view button and select student name for generation of QR code .Then share that image via any media application to student. For mark attendance select appropriate date, subject and scan the student's QR code. If user wants to view student's attendance select date from date to date, branch and year. To know detail information of any student, click on view student button, if we want to update or delete student details click on the update and delete student button.

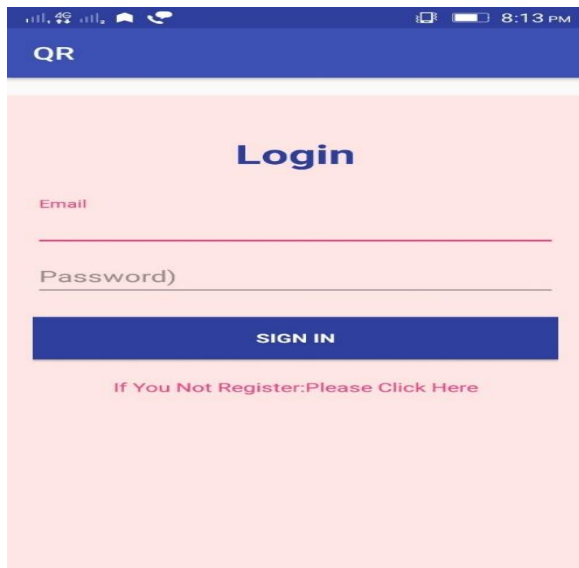


Fig.4: login page

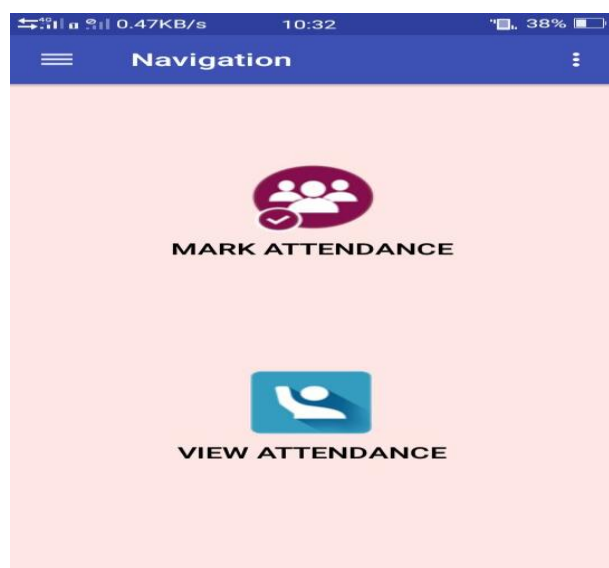


Fig.5: Mark and view attendance

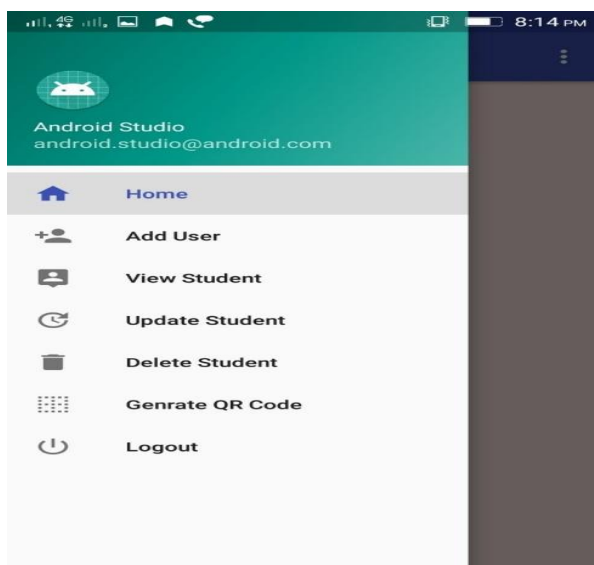


Fig.6: Home page

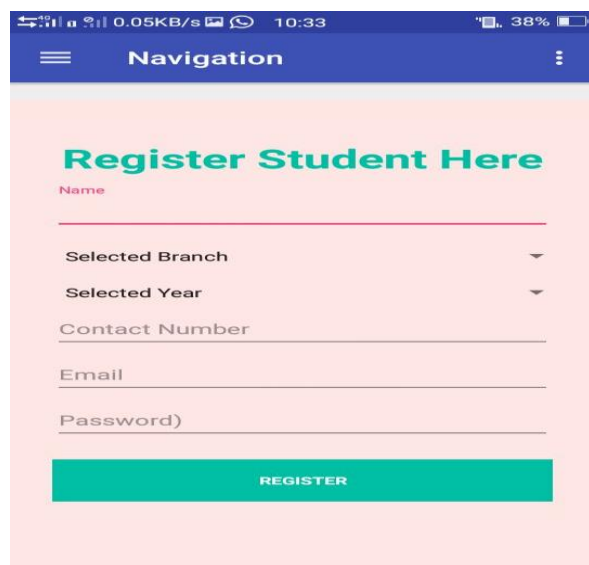


Fig.7: Student register

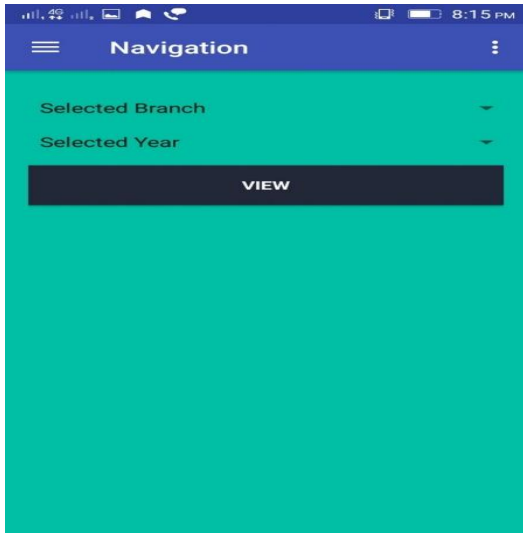


Fig.8: Generate QR code

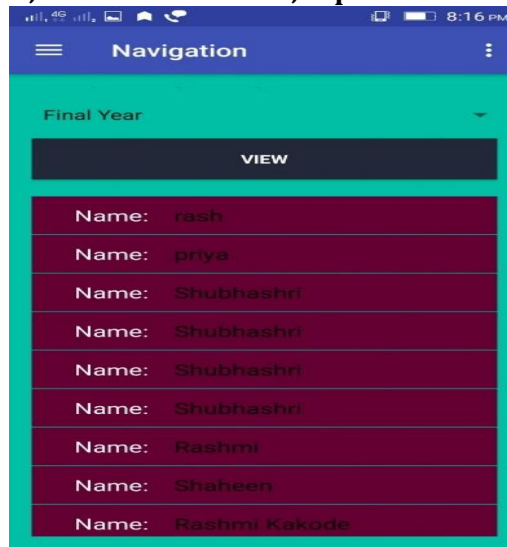


Fig.9: select student for QR code generate.



Fig.10: Generated QR code

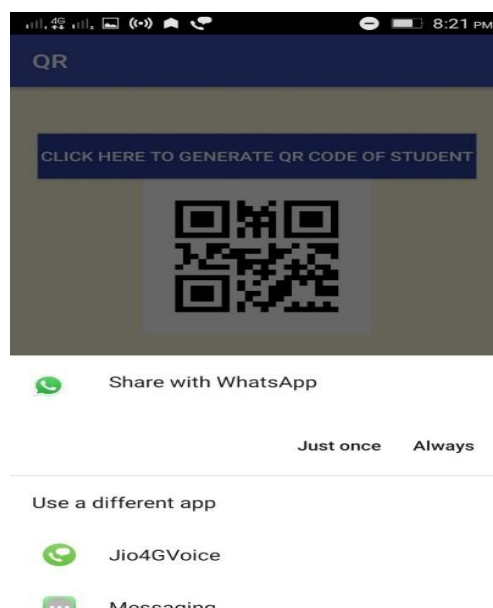


Fig.11: send QR code to student

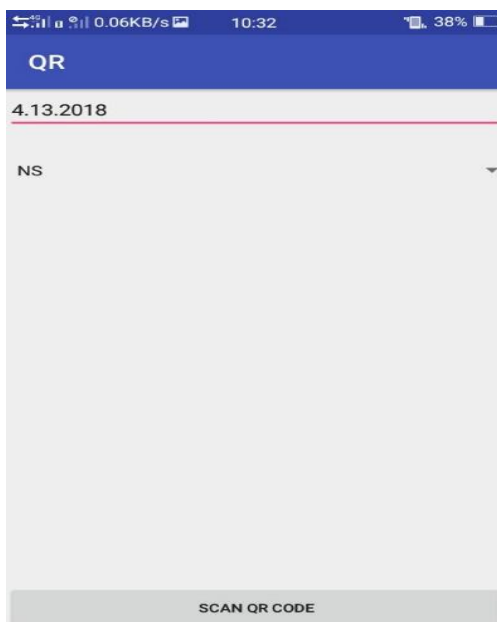


Fig.12: select date and subject for scan QR code

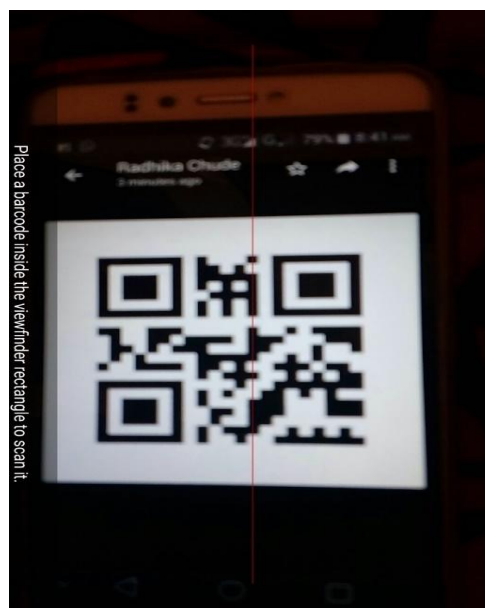


Fig.13: scanning of QR code

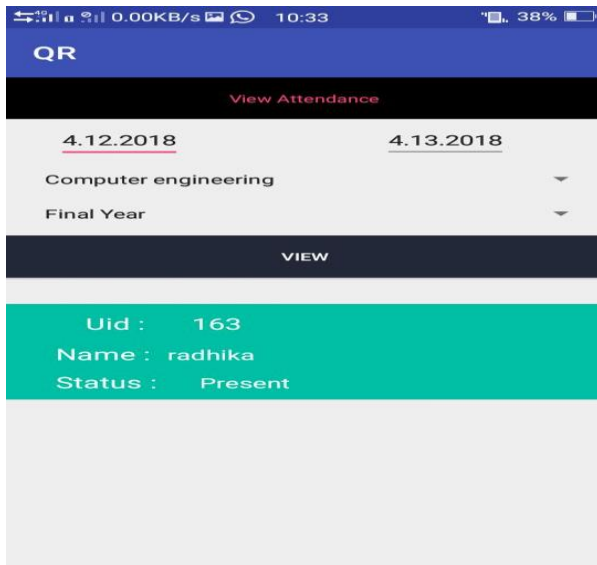


Fig.14: view attendance from date to To date



Fig.15: detail of student.

V. CONCLUSION

The developed application presented in this paper has been useful to analysis the attendance. It is very important in our daily life. QR code scanning provides grate advantage, among the all types of code scanning technology. It provide better accuracy for analysing the smart attendance. It is an efficient technique to store the attendance in the smart phone rather than wasting the paper.

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