MAJOR PROJECT

QR CODE BASED ATTENDANCE MANAGEMENT SYSTEM

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INTRODUCTION

- The issue of attendance registration in present-day institutions is really posing a great challenge in academic setting, because of the way the process is done and various hurdles surrounding it.
- The process involves the lecturer passing a paper to the students in a class to write their names and sign, or find their names in the paper to sign along their names.
- Imagine how many minutes it will take to register attendance in a class consisting more than 100 students in this fashion.
- In this work we proposed a Web and Android based attendance application system using QR Code (quick response code) technology.

ABSTRACT

- Smart phones are becoming more preferred companions to users than desktops or notebooks.
- Using Smart phones to speed up the process of taking attendance by university instructors would save lecturing time and hence enhance the educational process.
- We proposed a smart attendance system using QR Code technology that will simplify the attendance process where the QR Code is displayed on the screen by the computer/projector for students during or at the beginning/end of each lecture.
- The professor logs into the faculty website on the classroom computer and generates the unique QR Code. The students will need to scan the code from their smart phones in order to confirm their attendance.

MOTIVATION

- Every organization whether it be an educational institution or business organization, it has to maintain a proper record of attendance of students or employees for effective functioning of organization
- Designing a better attendance management system for students so that records be maintained with ease and accuracy was an important key behind motivating this project.
- This would improve accuracy of attendance records because it will remove all the hassles of roll calling and will save valuable time of the students as well as teachers.

QR CODE (Quick Response Code)

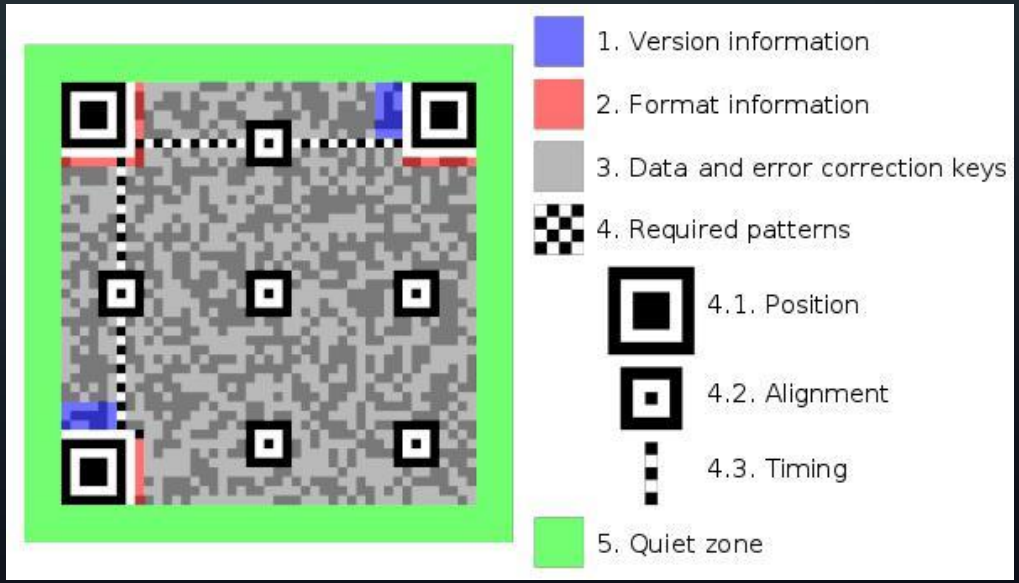
- QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional bar code) first designed for the automotive industry in Japan.

- Bar codes are optical machine-readable labels attached to items that record information related to the item.

- Recently, the QR Code system has become popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard UPC barcodes.
- The code consists of black modules (square dots) arranged in a square grid on a white background.

QR CODE (Quick Response Code)

- A QR code, as shown in above Fig. 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 formatted algorithmically by underlying software using Reed-Solomon error correction until the image can be appropriately interpreted.
- Data is then extracted from patterns present in both horizontal and vertical components of the image.



Problem Definition & Objective

- To overcome the disadvantages of the attendance system we are proposing a QR Code based attendance system for schools, colleges and universities.
- In the proposed system we are implementing a combination of a Web application along with an Android application to track, mark and store the attendance of the students on a daily basis.

Problem Definition & Objective

- The main objective of the automated attendance system is to computerize the traditional way of recording attendance and provide an efficient and automated method to mark and track attendance in institutions
- Advantages of QR Code Based Smart Attendance System:

➢ Provide better security.

➢ Maintenance of the system is easy and cost effective

➢ Provide accurate and efficient data

➢ User friendly and feasible.

PROPOSED METHODOLOGY

•We are implementing a combination of a Web application (Website) along with an Android application (App) to track, mark and store the attendance of the students on a daily basis.

➢**WEB APPLICATION:**

•The website, at first requires a simple login process called “Faculty Login” by the class instructor/professor from the system computer already situated in every classroom which is connected to a projector.

•During the class, or at the beginning/end, the instructor generates and displays a unique QR code to the students by selecting the particular subject and number of hours for that particular day.

PROPOSED METHODOLOGY

➢ **ANDROID APPLICATION:**

- The students can now scan the QR code displayed on the screen by the projector using the Android application called “QR Attendance”, provided to them by the institute/university and mark their attendance for the particular subject for that day
- When the student uses the app for the very first time, he/she needs to first register themselves providing necessary details such as full name, roll number, date of birth, semester, branch, e-mail and contact information
- So, the whole process is simple and should take less than a minute for any student as well as for the whole class to complete their attendance confirmation

HARDWARE REQUIREMENTS

Hardware	Operating System	RAM/Size	Requirement/Function
Camera enabled Smartphone	Android Os (>4.2)	>2Gb RAM >16Gb Storage device	Required for the application itself and to scan the QR code and register one's attendance by the student
Computer System	Windows 7/8/8.1/10 or Linux OS	>2GbRAM >150Gb Storage device	Required for the professor to login and generate unique QR code and display it to students

SOFTWARE REQUIREMENTS

SOFTWARE & TOOLS	Requirement/Function
Android Os	This system has been developed for android devices because nowadays majority users have android phones. For this project we have taken Android version 4.2 Jelly Bean APK version 16 as minimum requirement.
Android Studio	In this project we have used Android Studio Integrated Development environment to develop the android application (XML,JAVA).
Php ,MySql	For creating database to store the roll numbers and names of the students as well as for marking attendance, passwords, etc.
Web Browser	Common web browsers such as Google Chrome or Firefox for the working of the website(HTML,Javascript,Css)

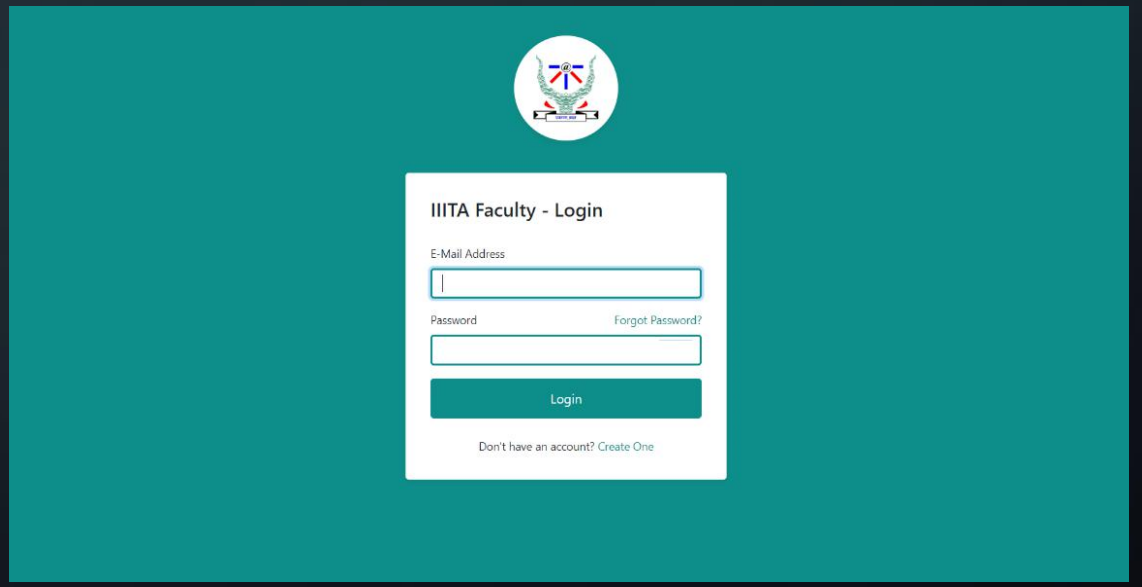
RESULTS

The following image samples are the end-result of the web application (website) and android application (app):

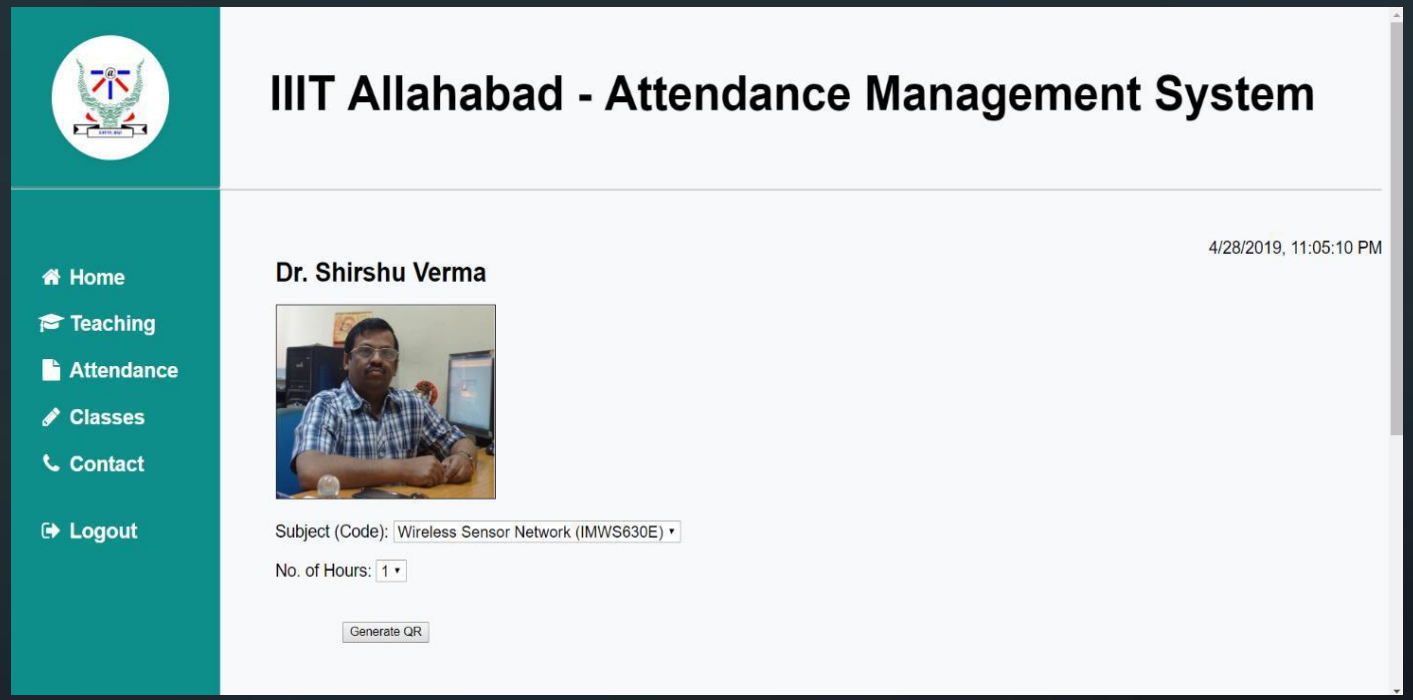
- **Web Application (Website):**

The following images show the initial steps in the process of QR code attendance:

This is the “Faculty Login” page, wherein the professor/instructor logins using his/her credentials.



RESULTS



The above shows a particular faculty's homepage, the professor may choose the current subject being taught, number of hours of the lecture and click "Generate QR".

RESULTS

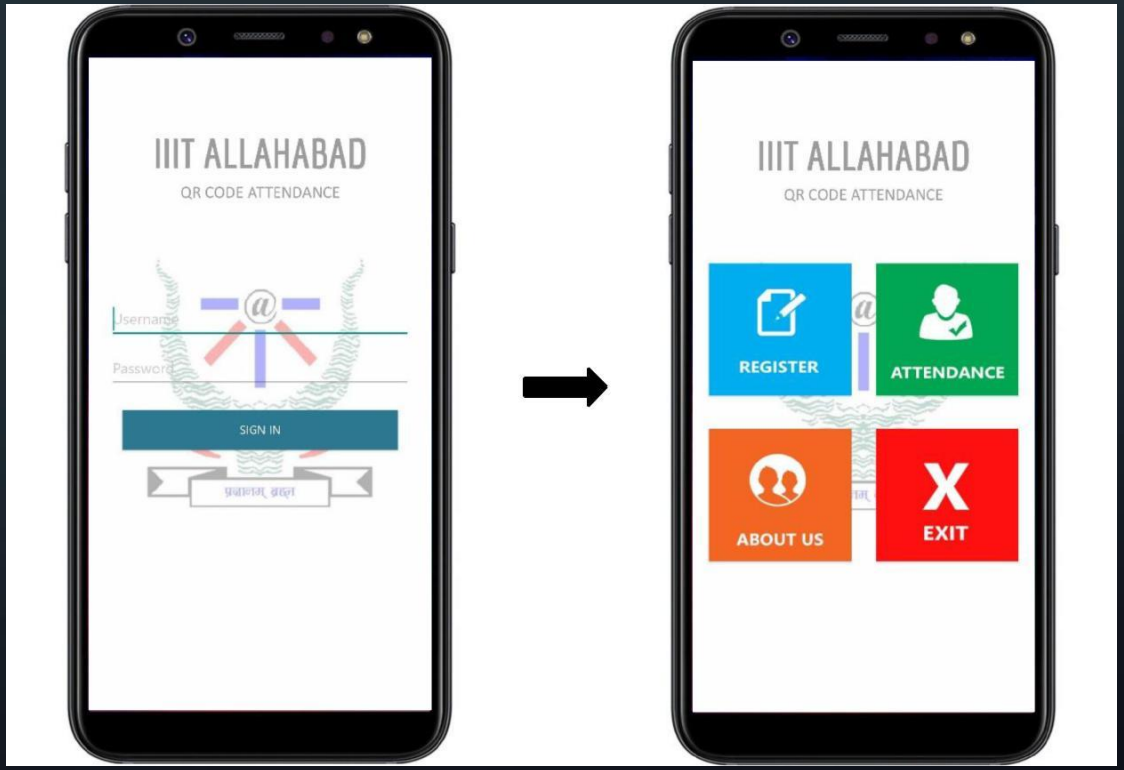
The above shows the QR code, which can now be displayed onto the projector screen for the students. The students should use the app on their smart phones to scan the QR code and mark their attendance for that subject.

RESULTS

➢**Android Application (App):**

The following images show the next steps in the process of QR code attendance:

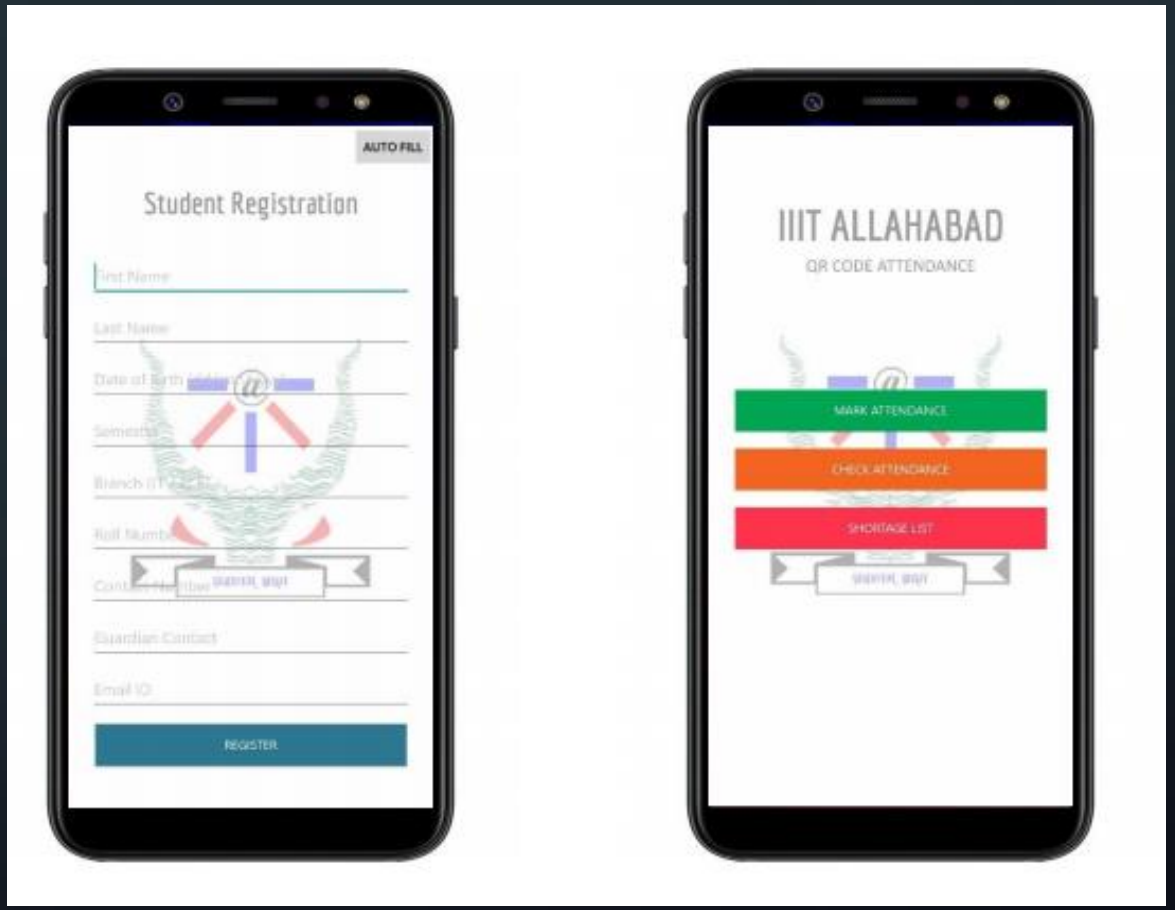
○ Fig 1 is the Student's login Page where Student logins Using his/her Credentials.



○ Fig 2 is the homepage after logging in, User friendly and ease of access.

RESULTS

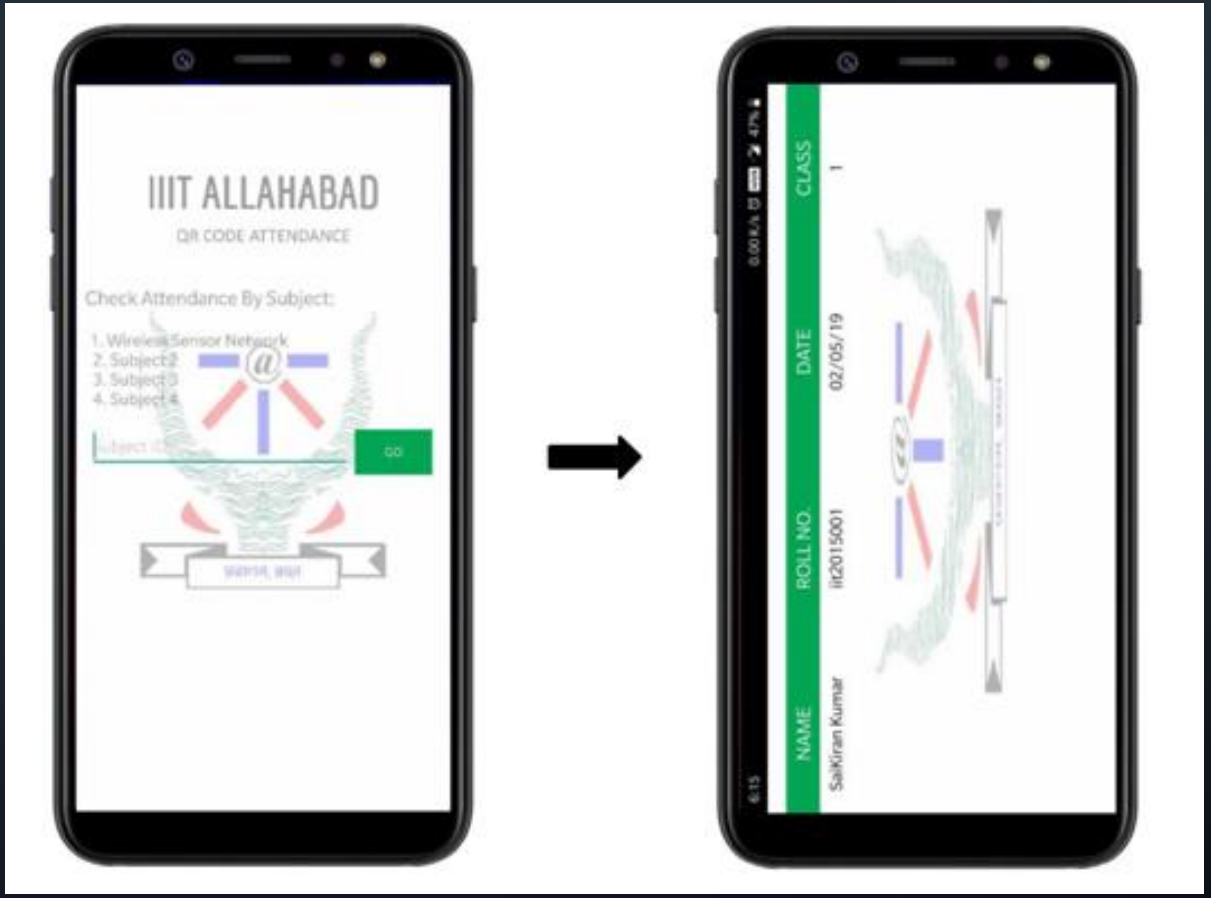
- Here is the Register page which is to be filled at the first time use of app.



- Here is the Register page which is to be filled at the first time use of app.

RESULTS

•Here is Check Attendance page where one can check his attendance by subject.



•Here is where one can verify his/her attendance [immediate confirmation].

THANK YOU !

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