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App development on attendance management system at institutions .

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Overview

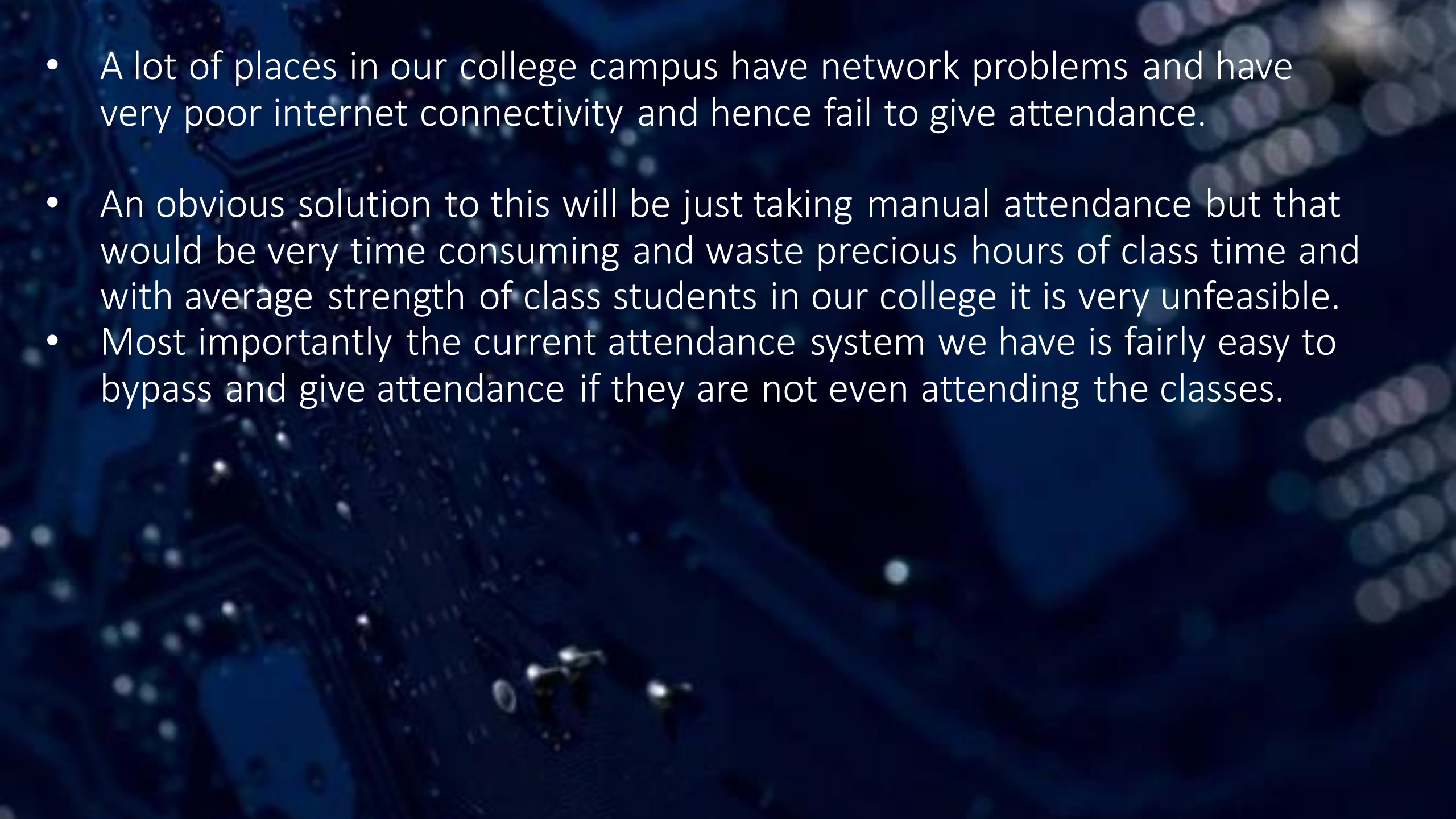
In today's competitive world, with increasing working hours and less classroom time, teachers need ed-Tech tools which help them manage precious class time efficiently. Instead of focusing on teaching, faculty members are often stuck with completing formal duties, for e.g. taking daily student attendance.

Manually taking attendance and registering it in files & musters makes the daily attendance a mundane task for the faculty and unnecessarily consumes classroom time.

To overcome such inefficient work processes, there are various software systems available to speed up the attendance process and reduce manual work. An **application based attendance management system** or digital attendance platform is one of them, which is developed to automate the daily attendance in schools. Additionally, it helps to maintain accurate records and generate summarized student attendance reports.

PROBLEM STATEMENT:

- Attendance being one of the most crucial part for tracking a students progress and attentiveness, it is very necessary to keep a proper tab. It becomes very inconvenient and quite chaotic to properly take attendance for such large number of students attending classes. Both the teachers and the students face equal inconvenience through the current procedure of attendance taking.
- Numerous number of students and professors face problems while giving attendance and also work their way around the system to give attendance while they are not even in the class.
- Prominent drawbacks such as availability of internet effecting the attendance procedure often make it hard for many student to give attendance on time which results in lose of attendance or in other cases teachers are held with an extra work of manually accepting attendance, which is obviously very time consuming.

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- A lot of places in our college campus have network problems and have very poor internet connectivity and hence fail to give attendance.
 - An obvious solution to this will be just taking manual attendance but that would be very time consuming and waste precious hours of class time and with average strength of class students in our college it is very unfeasible.
 - Most importantly the current attendance system we have is fairly easy to bypass and give attendance if they are not even attending the classes.

Solution

Taking attendance in a class can often be a time consuming and a manual process, which is prone to human error(s) and hence recording incorrect data. Also, querying the data per student can be the tedious process since it involves some sort of manual tracking/counting of days attended. With advent of smartphones and tablets which are very handy to use, this process can be made completely automated and error free by using the right technologies. For this project, We are creating an android based application that can be used for Attendance tracking which is easy to use and free from any manual tasks.

Students will just have to scan their QR code and the application will capture their unique student id from the via camera of the device. Once the student Id is recorded, application will update the appropriate attendance database for that class.

Survey

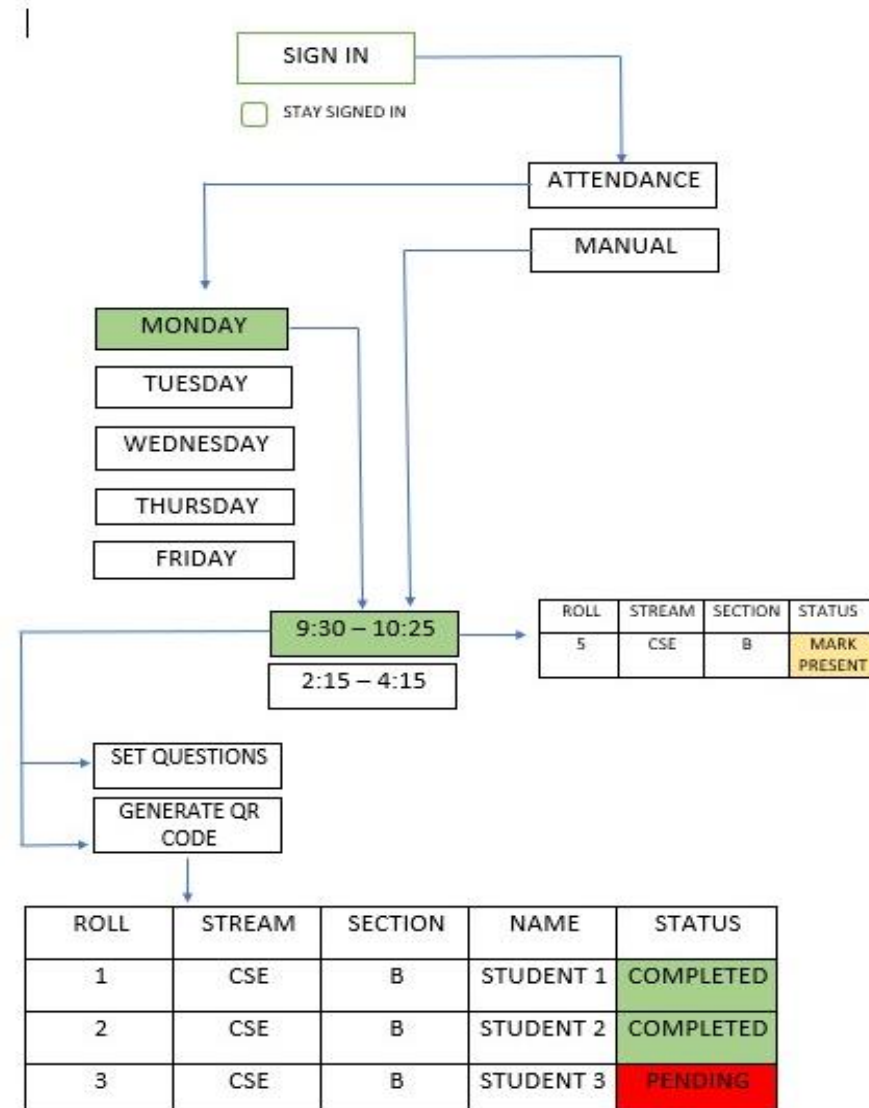
- Students have accounted the problem of poor networks due to which being marked absent even though they have proven to be present resulting in being debarred from exams in our campus.
- Students have even reported to the problem of not being marked present event though they have posted their presence in class this is due to server lacking and data base miss-handling or network trafficking.
- The website lacks when huge amount of visitors designated at the website .
- Professors have even reported the trespassing of proxy attendance via link sharing .

In this day and age, it has been quite feasible for students to bypass the security and give proxy attendance with the help of their fellow batchmates, it is also quite of a hassle to type bulky codes and login to a website especially for the students with poor network connections.

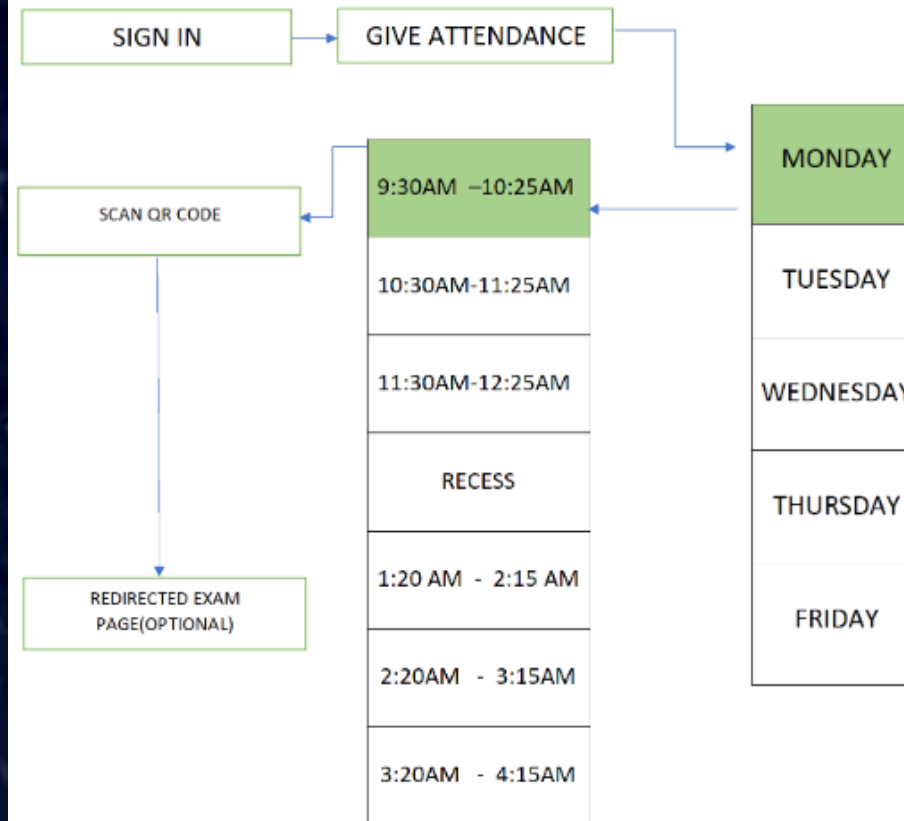
Not to mention it is an immensely tiresome of a task for the students as well as the professors to give/take manual attendance in order to cross-check if every student really is present. We have come together and decided to build this app in order to liberate this youth and our professors from this big issue.


There will primarily be two interfaces in our app which we have demonstrated below, the host interface which will only be available to the teacher's who will be conducting the classes and the other for the students.

THE HOST INTERFACE



THE USER INTERFACE



 REPRESENTS THE CURRENT CLASS/TIMING

Advantages

User-Friendly: The user interface is very simple. **Data storage and recovery is fast** and secure. Additionally, graphic reports are available which makes interpretation of data simple and easy to grasp.

Quick Report Generation: Various reports such as **Student-wise attendance, Day-wise attendance, Class-wise attendance, Month-Wise, Class-Attendance**, and much more. can be easily generated quickly. Current and back-dated reports are available readily.

Zero Errors: Reduction of paperwork and elimination of errors is possible when attendance is automated.

No trespassing : No one will be able to give any false attendance as there won't be a fuss of any link and cause our app only uses camera interface and no allowance of any pre existing images or scanned formats will be allowed via the app.

Efficient even if no power : In case of battery drainage there will rely an option with the host or to insert any data of attendance from to the data base manually.

Conclusion

This paper presents an analysis of different technologies which are used for attendance making system. Conventionally student attendance is taken by professor and it is waste of much time of lecture. Too much of proxy attendance can be recorded in manual system. This can be replaced with computerized system i.e. Mobile Based Attendance System, using Android OS and Quick Response Code. The same android application can be used for much purpose in future such as for payments in canteen, issuing book from library by generating static QR code for students.