

# Class 360: Student's Database Management System

Akshata Motagi<sup>1</sup>, Laxmikant Varkal<sup>2</sup>, Meenakshi Shrigandhi<sup>3</sup>, Manali Sonavane<sup>4</sup>

<sup>1, 2, 3, 4</sup> Dept of Electronics Engineering

<sup>1, 2, 3, 4</sup> Walchand Institute of Technology, Solapur

**Abstract-** Class 360: In this digital world, everything is done digitally, why not the management of the student's database. In the trending systems, there is a chance of human error and misplacement of data. To overcome this problem, we are proposing a system which is an Android app. The advantage of this system is that it is more secure, user-friendly. Class 360: Student's Database Management System deals with the maintenance of student's attendance, notices, class time-table. It automatically calculates the attendance percentage of students without any manual paper-based work. Admin/Teachers will be able to share notices of academic concerns. Admin/Teachers can also share daily class time-tables whenever needed.

**Keywords-** React-native, Node.js, Firebase, Attendance, Time-table, Notice, App-based, Frontend, Backend

## I. INTRODUCTION

In most educational institutions the attendance is taken manually. It is not only time consuming, but it is also difficult to maintain, unreliable and it can be lost. To overcome these problems we have developed a better system which is an android app. It is fully responsive and convenient to operate. In this system, records are kept safe and secure and the attendance information of class can be accessed easily. Class 360: Student Data Management System is software which is developed for daily student attendance in schools, colleges and institutes. The monitoring system is easy and is designed with a user-friendly interface. It facilitates access to the attendance information. This system will also help in evaluating attendance eligibility criteria of a student. In this system, we have also implemented Time-table and Notice features. Using these features, teachers can create, delete, update Time-table and Notice for every class.

## II. RELATED WORK

With growing technology there has been development in improving attendance systems, Web based, then hardware technology like fingerprint based attendance system and other computerized systems. The Web-based system communicates with databases residing on a remote server. It automatically calculates the attendance percentage of students without any manual paper-based work. Biometric

Attendance systems are commonly used systems to mark the presence in offices and schools. This project has a wide application in school, college, business organization, offices where marking of attendance is required accurately with time. All these systems reduce the paperwork and manual work in an efficient way. Time is saved and also the whole attendance system can be managed through one click.

## III. DESIGN AND IMPLEMENTATION

**Class 360:** Student's Database Management system is implemented with React-native (Magnus UI Framework). The Back-end Language used is Node.js API (application Program interface). To make the application attractive and to increase the use of this application, HTML, CSS, JavaScript languages are used. Also, attractive characters and visualizations are designed using Figma and Adobe Illustrator.

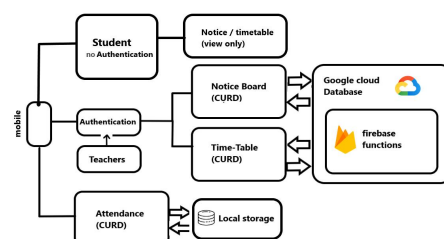
## IV. DATABASE

This system uses MongoDB (NoSQL), a mechanism for storage and retrieval of data, as a backend database. NoSQL database is a non-relational database. These databases are basically non-tabular databases and store data other than relational databases. This system provides storage for semi-structured data, does not require a fixed schema and it's easy to scale with large amounts of data.

## V. INTERFACE

The application is designed with the latest technology of user interface designs by means of its simplicity, lightweight weighted pages, and responsive to all device screens.

## VI. SYSTEM DIAGRAM



This app contains two authentication sections: the admin section and the user section. In the admin section, they are provided with a link with which they can login into the app. Here, the staff, who are handling the subjects, will be responsible to mark the attendance of the students, and based on that an accurate report is generated. In the user's section, the students are only able to view their attendance percentage. Admin/Staff will be able to share notice regarding academic studies i.e. Test notice, Admission notice and many more. Student's can read the notices by their static class time-table:- Admin/Staff can share and edit the class time table to their students through the app. Student's will be able to view the class time table.

### VII. AUTHENTICATION SECTION 1: ADMIN SECTION

Admin can access all features inside the app after authentication. For Authentication they need an access key to register in the app and after login, they can perform CRUD (create, read, update, delete) operation for Timetable, Notice board and Attendance.

### VIII. AUTHENTICATION SECTION 2: USER SECTION

Students don't require Authentication and Registration. They can directly access Timetable and Notice. But, they can only view these features, they can't modify or update anything in it. Also they can't view the Attendance feature because it's offline and it's only accessible by admin.

### IX. CONCLUSION AND FUTURE WORK

In this project, the android-based Class 360: student attendance management system developed using

- **Front end languages:** react.js, (material-Ui JavaScript framework of Google), react-native (Magnus UI framework), html, CSS, JavaScript
- **Back-end languages:** node.js
- **Backend database:** MongoDB (NoSQL) for designing which fully meets the system's goals.

This system overcomes many limitations incorporated in attendance, this system saves a great amount of time and reduces errors which may occur during attendance calculation.

Some other benefits are: -

- I. Automated and android-based for easy accessibility.

- II. It is a dynamic and flexible system.
- III. It excludes paperwork and the possibility of making mistakes while using paper for taking attendance.
- IV. It is very user friendly and handy.
- V. The records of current and previous can be available anytime.

### REFERENCES

- [1] "A Review on Web-Based Attendance Management System" International Journal of Science and Research (IJSR) ISSN: DOI:2, April-2019 link : <https://www.ijsr.net/archive/v8i4/ART20197040.pdf>
- [2] A Review of Student Attendance System Using Near-Field Communication (NFC) Technology DOI: 1, Aug-2020 [https://link.springer.com/chapter/10.1007/978-3-319-21410-8\\_56?noAccess=true](https://link.springer.com/chapter/10.1007/978-3-319-21410-8_56?noAccess=true)
- [3] GATETE Marcel, HARAWIRA Flaubert, "A Development of an Online Student Attendance Management Information System: Case Study "University of Tourism, Technology, and Business Studies"," International Journal of Scientific Research in Computer Science and Engineering, Vol.10, Issue.1, pp.32-48,2022.link : [https://www.isroset.org/journal/IJSRCSE/full\\_paper\\_view.php?paper\\_id=2694](https://www.isroset.org/journal/IJSRCSE/full_paper_view.php?paper_id=2694)
- [4] Students Attendance Monitoring System Based on RFID and GSM Network link : <https://www.jetir.org/view?paper=JETIR1504072Volume 2 Issue 4, April-2015eISSN: 2349-5162>
- [5] SMART ATTENDANCE MANAGEMENT SYSTEM (SAMS) Volume 3 Issue 2 February-2016 <https://www.jetir.org/view?paper=JETIR1602010 UGC Approved Journal no 63975>
- [6] "Multichannel Attendance Management System using QR Code and Location" International Journal of Scientific research in Computer Science, Engineering and Information Technology <https://ijsrcseit.com/paper/CSEIT217347.pdf> Published : 22 May 2021
- [7] "Student Attendance Management System" International Journal for Scientific Research and Development link : <http://ijsrcd.com/Article.php?manuscript=IJSRDV4I90357> Published in: Volume : 4, Issue : 9 Publication Date: 01/12/2016
- [8] "Student Attendance Management System" International Journal of Engineering and Technology 6(2):49-53 DOI:10.21276/sjet.2018.6.2.1 [https://www.researchgate.net/publication/323511629\\_Student\\_Attendance\\_Management\\_System](https://www.researchgate.net/publication/323511629_Student_Attendance_Management_System)