Interactive Application for Engineering College

Vaibhav Bharambe[1], Rupesh Patil[1], Tushar Patil[1], Vijay Patil[1], Rohankumar Patil[1]

Rohidas B. Sangore[2]

[1] *Student, Department of Information Technology, SSBT's College of Engineering and Technology, Jalgaon, Maharashtra, India.*

[2] *Professor, Department of Information Technology, SSBT's College of Engineering and Technology, Jalgaon, Maharashtra, India.*

Corresponding Author: vaibhavbharambe1@gmail.com

Abstract: - Key features of this project is to provide automation to the process of managing student information in a college. In the real world, the information or data in institute is in the form of notice, hand-written manual, verbal message, is being spread among the students. Now a day most of the student and faculty in college are using a mobile phone, personal computer and various latest technology for faster and easier communication among them. Approach of communication is Android. The core idea of this project is to implement android based Mobile college application for development of colleges and education related system. The android application will be used by students and teachers. In the existing system, all the information has to view in a hard file, or in website. At the same time while searching any information it is too difficult to access and takes a lot of time to manage student data in a college. For overcome this problem a smart phone based application using Android phone can be used to make this process easier, secure and less error prone. It reduces time require to manage college student information. The system of tacking the attendance of the student on basis of presence in class".

Key Words:— *Attendance, Notice, Application, etc..*

I. INTRODUCTION

In current scenario, management and maintenance of student information is very hard task for any institution. To reduce the manual work and to achieve more efficiency in managing student's information, a smart phone based mobile application using android and web application can be applied to make this process easier and beneficial.

Android application is mainly use for taking attendance, college information and notice. Android application is the system of tacking the attendance of the student on basis of presence in class and broadcasting the notice to student. Attendance is taking from only teachers and student only see their attendance with graphical representation report on their personal account. Notice is seeing personal as well as public account on android application. Most of the student using android application so android application is more effective in at college campus. Using this application reduce manual word into atomize word.

The Web application of this system also does the same work with more features to maintain the student's record and the attendance record but the access of the web application is only for faculty and the admin.

II. EXISTING SYSTEM

The system which is used nowadays has some drawbacks which need to be improved for better performance. The system through which the feedback is taken is not good enough. The views of each and every student are not expressed through these systems. As the technology is developed day by day we need to use this technology so we can get an efficient result in adequate time. For attendance in the present system all work is done on paper. The whole session attendance is stored in register and at the end of the session the reports are generated. We are not interested in generating report in the middle of the session or as per the requirement because it takes more time in calculation. At the end of session, the students who don't have75% attendance get a notice. This is a very time consuming process. In the present system the result is viewed on the notice board. It requires lot of paperwork and is time consuming.

III. SCOPE

The application must be designed is economically with respect to the students and teachers point of view. The main purpose of these application is reducing manual work and convert into automate work using android and web base technology. Users of android device are more, mostly in college student so that it easy to connect them. Our basic approach attempts to develop a smart phone based application using Android which can be used to make this process easier, secure and less error prone. The communication between teachers and student are possible using this application. To provide access to information related to college, departments, uploaded, notes, news and events, exams and attendance report on the go information management system. It provides

International Journal of Progressive Research in Science and Engineering
Volume-1, Issue-3, June-2020
www.ijprse.com

an interactive platform for the information of a large number of students and the manage attendance of students.

IV. SYSTEM ARCHITECTURE

The system architecture has a smart phone with android OS, a web services, a database server and the user as its components. The android smart phone or tablet must use 3G or WiFi network for internet connectivity to ensure better performance however 2G should also satisfy user request with added disadvantage of time lag. The user will login to the application through an android smart phone. The user-type is verified with the database server and access is given to the appropriate user. The web application also can be used to login and perform certain operations such as registration of users, generation of reports. The web application and the android application access data from a common Database server through the internet.

System Tools:
Android Studio has been used as a development environment. Java, PHP and HTML have been used as programming and scripting languages. While, MySQL has been used as a Database management system. WAMP server has been used as a localhost. And CSS as a script for fine-tuning the screens appearance.

System Database:
Database of the proposed system consists of five tables: users, students, courses, departments and attendance logs

The overall system design consists of following modules:

    (a) User:
In this module we are authenticating the users by providing user name and password. If user name and password is valid then they will be taken to their account access. When they get matched with each other, system checks their status and transfer the control to respective user-interface. Users are categorized into four type super user, admin user, teachers (staff) and student.

    (b) Database:
The application can use MySQL as its database and Apache Tomcat Server because of their simplicity and flexibility. This module store information about students, faculty and model their data on specified operations. These operations can be storing student attendance, result data or can be authentication credentials.

    (c) Staff:
This module must be being designed for staff, which use mobile phone as well as web application to take attendance and upload college notifications as well as attendance report. Super admin assign ID's to all department HOD(Admin) and registered them. Only after successful registration the operations are performed. If username and password cannot match, he/she can enter in to next static screen.

    (d) Notice:
This module allows the department HOD to update students about any college related information through notifications. The students can view notifications provided by the interface provided by application. HOD can send message to only available options like all student, all faculty, specific faculty and to all. Teachers is able to send notice to student.

V. WORK FLOW

The detailed workflow of this application is as follows:
The application is divided into 3 sub-groups-

A. *Admin:*
Admin Registration:
The first step in this application is to get the HOD, staff members and teaching faculty to register. Any of the authenticate admin can do this registration by providing the proper information of himself or herself.
Admin Login:
After registering the admin is allowed to log in. He or she can now view admin homepage where there are options to add faculty, add student, assign subject, take attendance, send notice to student. He can also view the attendance taken and attendance report.
Take Attendance:
The admin can take the attendance as well as he can modify the attendance if required. The modification of the attendance can only have done by the admin.
Send Notice:
Admin can send notice to students for any of the complaint or for any other information broadcasting to the students.

B. *Faculty/ Teaching Staff*
Take Attendance:
Teaching faculty can take attendance of students during the lecture i.e. within that time frame. If he or she takes attendance anytime else, he is not allowed to do that. After taking attendance, he can view it in the report file generated and keep it for future use.
Check notice:
Faculty can receive important announcements, information from the HOD or admin through this notice board.

C. *Students*:
View Attendance:
Students can view attendance taken by the faculty or HOD.
View notices sent by college:
Notices are sent to the students by HOD or admin. Useful information, college notices, important announcements are received on students registered phone. They can view it anytime.

International Journal of Progressive Research in Science and Engineering
Volume-1, Issue-3, June-2020
www.ijprse.com

VI. SYSTEM USER INTERFACE

The User Interface of the application have two different modules one is Android application and another is Web application. The images given below shows the user interface of the Android application and the Web application.
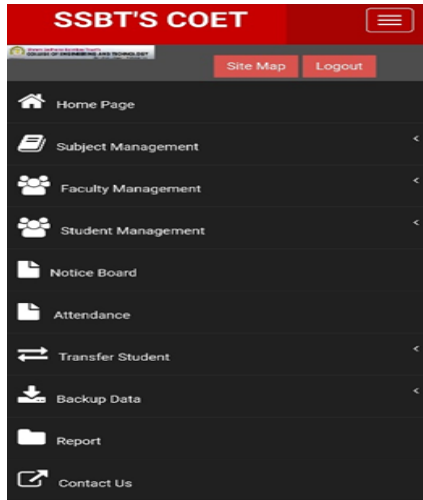

Fig 6.1 Android Application

A. Faculty Registration:

The application provides facilities to faculty do their registration. All the information related to faculty is taking from that interface. Figure is showing the interface provides to the faculty. All data can store into the central data base.

Because of this the information regarding all the faculties are maintained properly. Also all the details of the faculty are stored in the database because of this the admin can handle the dada properly and also the contact details of the faculty also there for the proper contact from the admin to the faculty.
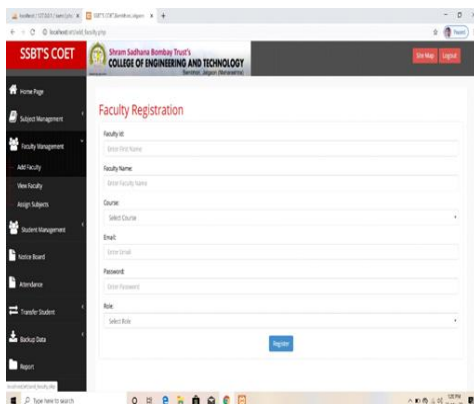
Fig 6.2 Faculty Registration

B. Student Registration:

The application provides facilities to admin do their registration. All the information related to students is taking from that interface. Figure are showing the interface provide to the faculty because student registration can have done from the faculty. All data can store into the central database.

The Student Registration is one of the most important part of the application because only authenticate student's registration can be done and it is very important for proper management of the student's record. And also the department and the semester of the students is properly stored for the proper attendance.
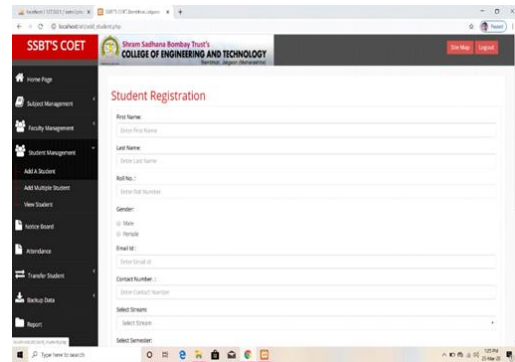

Fig 6.3 Student Registration

C. Add Subject:

Add Subject is only access to the admin. In database subject table information is taking from this interface and at the time of add subject all the information about the subject is stored in the database. At the time of assign subject, the name of subject taking from data base as per that data.

While adding the Subject the code of the subject also the full name of the subject and the course of the subject and semester of the subject is mentioned there for easy understanding of the subject.
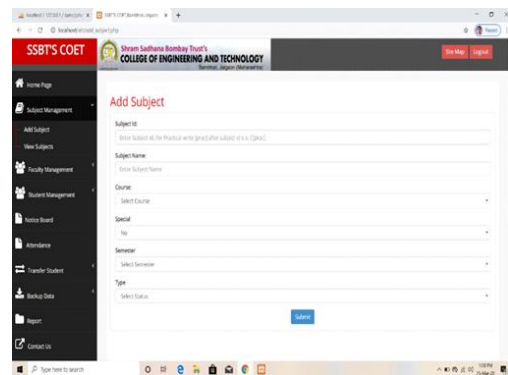

Fig 6.4 Add Subject

International Journal of Progressive Research in Science and Engineering
Volume-1, Issue-3, June-2020
www.ijprse.com

D. Assign Subject:

Admin can able to assign subject to faculty. This interface only has access from the admin panel (head of department). As per that information data will arrange in data base. Name of faculty is taking from faculty data base as per their department.

The proper subject assign is also a very difficult task to make it easy the application provides the proper management of the assigned subject is done by the application so the Head of the department only selects the subject faculty and the semester for proper assignment of the subject.
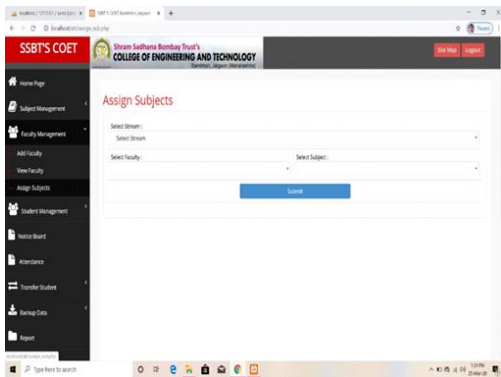
Fig 6.5 Assign Subject

E. Take Attendance:

Application is used for taking attendance of the students. The figure below showing the interface for taking attendance. This section accessed by the faculty as well as the admin at time taking attendance. If attendance is taken, then only admin have the facility modified it the faculty cannot have the right to change the attendance. Attendance is taking as per subject, date and time. Also all the attendance record is stored in the database for proper attendance management and also it helps for the report generation of the student attendance.
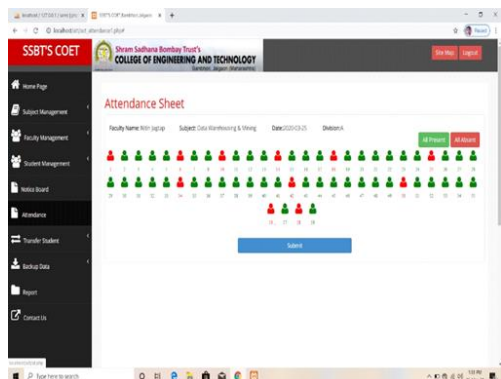

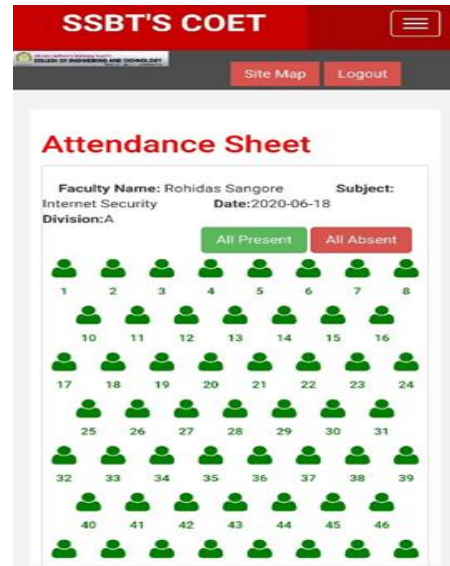Fig 6.6 Take Attendance on Web Application

Fig 6.7 Take Attendance on Android Application

F. Notice Board:

Application contains one main module is a Notice Board. For easy notice sending to all the students for any of the important event or the other information purpose the notice board is given in this application. The figure is showing that notice board provide to faculty as well as Head of Department.

Notices are broadcasting from admin or faculty to all Students account. This interface used for writing the notice in application is by using the web application as per proper date and all the notices with its date and data is stored in the notice table of the database.
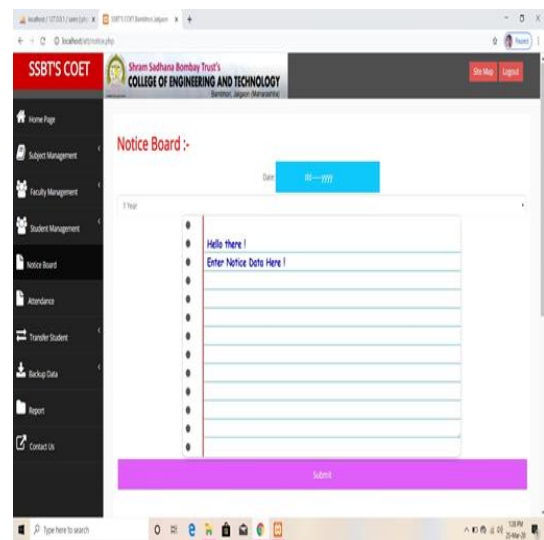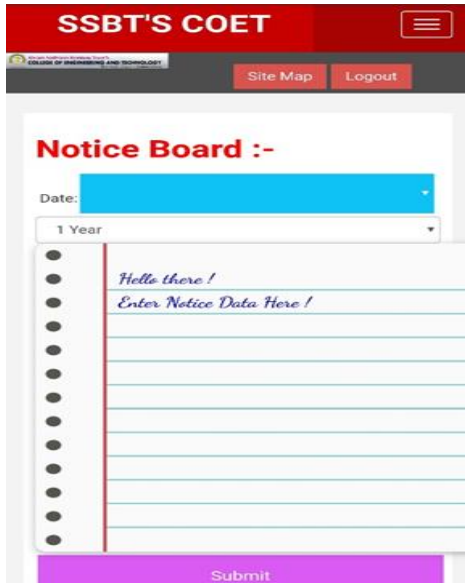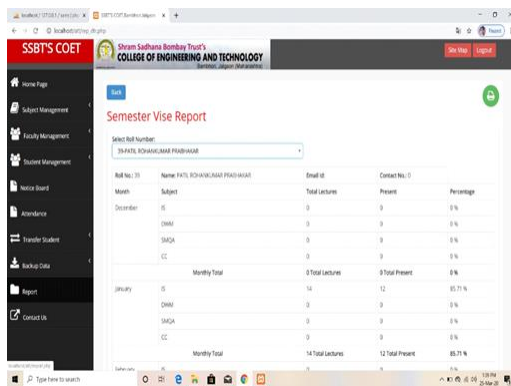

Fig 6.8 Notice Board

International Journal of Progressive Research in Science and Engineering
Volume-1, Issue-3, June-2020
www.ijprse.com

Fig 6.9 Notice Board on Android Application

G. Attendance Report:

This application has the feature of auto generating the attendance report of the student attendance. This interface is providing report as per semester.

This report is only access from the faculty and admin panel. Head of Department can do the analysis of the report and send the notice as per that report to the student as well as faculty. This report can also we get in excel sheet for other use.

Fig 6.10 Attendance Report

VII. ADVANTAGES

- Reduce effort require to manage manual work.

- The application will strongly simplify and speed up the result preparation.
- Student stay more connected with their teachers and HOD's.
- Student can easily analysis their attendance report.
- The system is easy to deploy, safe with convenient operations.
- Access to authorized personnel only.

VIII. DIS-ADVANTAGES

- Designing the architecture for the system can be challenging part to make framework dynamic.
- The service servers can have their own technology to make it really secured.
- Every user requires android base device.

IX. APPLICATIONS

- Generates automated as well as graphical representative reports for attendance.
- Notifications and attendance fill to be very successful.
- Staff can arrange student and faculty which will help super admin.

X. FUTURE SCOPE

In the future, by using verification more security can be provided for the personal and the college information shared password which improves data security levels. Multiple types of events can be displayed by using the digital notice board. On the other hand, the attendance system helps to manage the attendance of the students and report of the attendance. Additionally, we can provide better user interface with advanced functionalities for proper understanding of the application. And also the application can provide all the information about the admission process of the college and the contact details in the proper manner.

More importantly, this app can be extended to fetch the information of the students and the academic details of the student and also the attendance report of the student. User can add, update and delete event details on the digital notice board in the application. Events can be seen in a customized view format like day/week/month and year.

XI. CONCLUSION

The system is reliability, time savings and easy control. Students will also view results, attendance and notice details using this application. Students can view details, notifications anywhere and anytime. The application will simplify and speed up the result analyst process. A system that reduces the work and resources required in traditional process. The proposed system will provide the new way of computing and displaying an operation with responsive and attractive user interface. Thus, on the basis of analyzing the existing system, we have come to a conclusion that the propose system will not only the automation to the college, but will also help to department the system and in turn help to deploy resources efficiently. It is user friendly system as data manipulation and retrieval done via user interface, make it universal attendance system. Also help to broadcasting notice.

Acknowledgment

REFERENCES

[1]. Mohd Heikal Husin, "Smart Attendance Systems Using Technologies", October, 2009.

[2]. Rakhi Joshi, "Android Based Smart Learning and Attendance Management System", June 2015.

[3]. Ganiyu R. A.,"Mobile Operating Systems and Application Development Platforms", July10, 2014.

[4]. Android Architecture "http://www.tutorialspoint.com/ andoird/andoird_ architecture.htm".

[5]. Usha Rani& Ramya Krishna, "Overview of Android for User Applications", November 2014.

[6]. Ramesh Shrestha,Yao Aihong,"Design of Secure location and Message Sharing System for Android Platform ", International Conference on Advanced Computer Science Applications and Technologies 978-1-4673-0089-6/12/ 2012 IEEE.

[7]. Balazs Beny'o, Balint Sodor, Tibor Doktor and Gergely Fordos, "Student attendance monitoring at the university using NFC", International Conference on Advanced Computer Science Applications and Technologies 978-1-4577- 05809/12/@2012 IEEE.

[8]. Fei Shao, Zinan Chang, Yi Zhang, " AES Encryption Algorithm Based on the High Performance Computing of GPU", Second International Conference on Communication Software and Networks,978-0-7695-39614/10 2010 IEEE.

[9]. Hsuan-Che Yang,Wen-Ying Wang "Facilitating Academic Service-Learning with Android-based Applications and Ubiquitous Computing Environment ",Published in 978-0-7695-4493-9/11 2011 IEEE.

[10]. Cia Zhongxi,"Campus Employment Information Network Development based on Android Platform" International Conference on Intelligent Transportation, Big Data Smart City 2016 IEEE.