

COLLEGE ADMINISTRATION & MANAGEMENT SYSTEM

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ABSTRACT

In this modern technology all things happen online so we developed an app i.e College Administration and Management System (CAMS) which can play an important role in college management. This mobile application can be accessed throughout the institution or from anywhere. This application performed various functions such as monitoring attendance of the students, disseminating information like notices, e-books, lab manuals, assignments and event related information and photos. College Administration and Management System (CAMS) maintains records of students and educators. This application provides login credentials to users of the system and with the help of credentials users can access as well as modify data as per the permissions given to them by the admin of the system. CAMS is an intranet based application that aims at providing and maintaining information. The user of this application can access the system to either upload, delete, update and download some information from the database. The system will be providing separate roles for every user with different levels of access. College Administration and Management System can be used as a knowledge management system.

Keywords: Credentials, Educators, Lab Manuals.

I. INTRODUCTION

The title of the project is "College Administration and Management System (CAMS). The aim of this Mobile Application is to manage and provide information within an organization. The application having two types of users having different apps for each i.e. User app and Admin app. CAMS is a combination of two mobile applications that will help to receive the information from anywhere, anytime. There are two android applications for easy to use purposes. Admin app consist of four types of users i.e. admin, management authority, educators and class representatives of each class. In the Admin app information update, upload, delete operations performed. The other app is the User app. In this application two users exist, one is a student and the other is faculty members(teaching/non- teaching). This app mainly focuses on information retrieval which is uploaded from the Admin app. This application can be used as an Information Management System for the college. Admin of the application create login id and password credentials and provide credentials via email system for each user. Admin dashboard having functionalities such as managing students information as well as faculties information also admin can modify and delete that information. Admin can create and modify timetables, upload and delete notices, upload event related information and photos, also admin can manage subjects. Management authority having functionalities such as viewing fees report and attendance report of the student from the database. Another user of the admin app is educators(technical/non-technical). Educators can provide notices to students, taking and monitoring lecture wise attendance and also provide subject related notes, assignments, lab manuals and study materials to students. Class Representatives is one of the users of the Admin app. CR can provide notices and view, modify student information of their respective class. Second app is a User app, having two users i.e. students and Educators. Students can login with the credentials and can use this app as an information retrieval system. Students can view notices which are provided by admin, faculty members and also from CR. Students can view and download the study materials, notes, assignments and lab manuals from the app in just a single click. If Educators of Admin app provide some new content of study related information then students can get notified with notification alert. Students can view their timetable, and faculty information and view the subject list assigned to them. Students can view and update their personal information as well as students can view and enjoy photos of some events held by their college. Also students can view event related notice/information .another user of User app is Educators (technical/non-technical). They can login with the system and view subject information assigned to them for teaching purposes. They can

check notices, subject lists, photos of events. User app provides college related information to students as well as to educators of the college like college principal, vice-principal information, college vision, mission, department information, College office contact, address etc. Basically User app purpose is to retrieve information from the database.

II. LITERATURE REVIEW

Online Notice Board [1]- This system is a web-based system where teachers can register and post information/notice to students. Students get notices and information easily on the website. Notices are sorted by date and time which will be displayed on the home page. All information related to notices and users saved on PHP and MySQL. The limitations of this system is there is no notification alert for new postings. In this system it is difficult to manage changes between the phases there is the possibility of blocking which can slow down the productivity and efficiency of the process and problem facing at deletion of the notice.

ERP for College Management System[2]- This system provides a web-based simple interface for maintaining students and faculties information. It can manage daily attendance of the students and Admin of the system can check attendance reports. It provides study materials like e-books, assignments, lab manuals etc. to students. This system can maintain digital records without redundant entries. It helps to reduce paper work.

This system developed using HTML,CSS for frontend and PHP and MySQL for backend .It is a Website application. The limitations of this system is it can't provide timetables to students with their respective class and not provide event related notices and photos to students.

E-Learning Application using cloud computing [3]- This paper describes the importance of cloud computing environments for any institutes and learner usage, to underscore its possible benefits. Cloud Computing Technology gives a platform to run our application on a services basis to any end users using the internet from cloud infrastructure. It will provide an optimum affordable price package to educational organizations in a particular objective. Timetable Management application [4]- Timetable is one of specific methods of general scheduling problem. A timetable is the plan of lecture time and duration, lecture venue and lecture date between teacher and student in a pre-fixed time period, satisfying a set of varying constraints. It requires specific resources such as a room, teaching aid and the like. Timetabling is the method by which the curriculum is brought to the students. In every institution, there is the need to design a good timetable that shares the academic activities among its resources effectively. This mobile application creates a timetable and uploads it to the database and in the Student app it will be displayed. The limitation of the system is that whenever a single minor change is needed in the timetable then it has to be re-created in the traditional approach. An Online Departmental Fee Management System [5]- This system developed using PHP, MySQL database and Object oriented Analysis and Design Methodology (OOADM) was achieved. A conceptual framework for an online departmental fee management system is developed that can address the difficulties encountered by students, parents and college management regarding fee payments and collections. This system gives quick access to fees payment, data and modifications of records if necessary. It is a web based application which maintains the fees record of the student. This system does not provide a separate screen to students to see their reports regarding fees.

III. LIMITATIONS OF EXISTING SYSTEM

1. There is no Notification alert system when no posting happens.
2. No separate student panel, where all students can see and check their reports regarding attendance and fees.
3. Whenever a single minor change is needed in the timetable then it has to be re-created and uploaded in the traditional approach.
4. Deletion of the existing notices is a tricky task because there are chances of blocking which can slow down the system.
5. Redundant data chances are there.

IV. PROPOSE SYSTEM

The system architecture has a smart phone with android OS, a database server and the user as its component. The College Administration and Management System is a combination of two apps i.e. Admin app which consist of four users i.e. admin itself, management authority, faculties and class representatives. Another app is User

app which consists of two users, student and faculty members (technical / non - technical). Both apps are user-friendly and provide a simple, appropriate interface to its users.

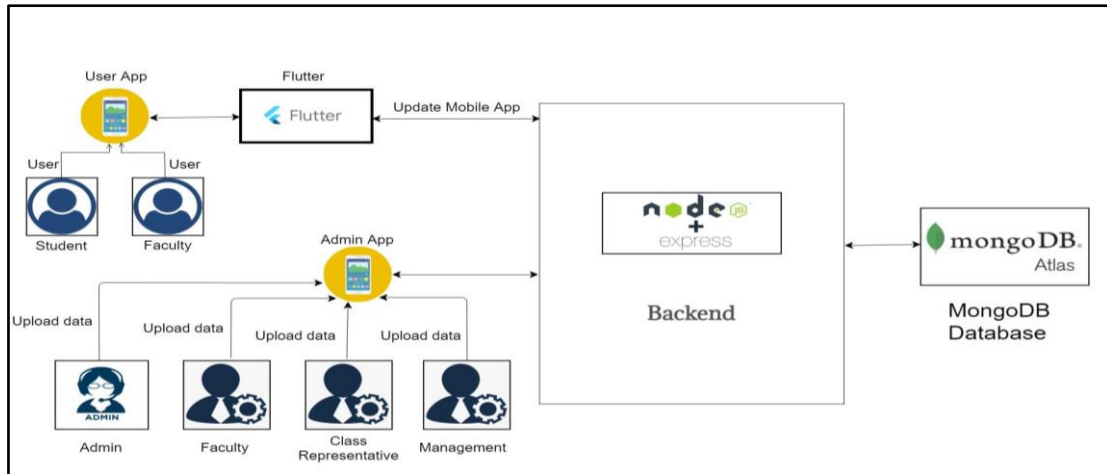


Fig 1: System Architecture

Admin app upload data on database and User app retrieve data and information from database. Admin app provides notices, timetable, event related photos and information, also it maintains information records of students and educators. Educators can be Technical or non-technical staff. They both can post study related documents to students and notices also. Management authorities can check and verify reports regarding fees and attendance. Class representative is also a student having login credentials to use the admin app with a limited period of time. Once the duration of CR post is finished then automatically credential is not supposed to be used. CR can post new notices to its respective class and maintain/modify student related information. Admin app purpose is to post essential information/data to students and faculty and maintain the records. In the User app users have a profile page where they can edit their profile data. Through this User app users can access the complete information about the college campus such as courses available, admission procedure, college events, departments, sports achievement etc. Redundant data does not exist in the application. User app getting notified when new posting of notices happen from the admin app.

V. SYSTEM FLOW DIAGRAM

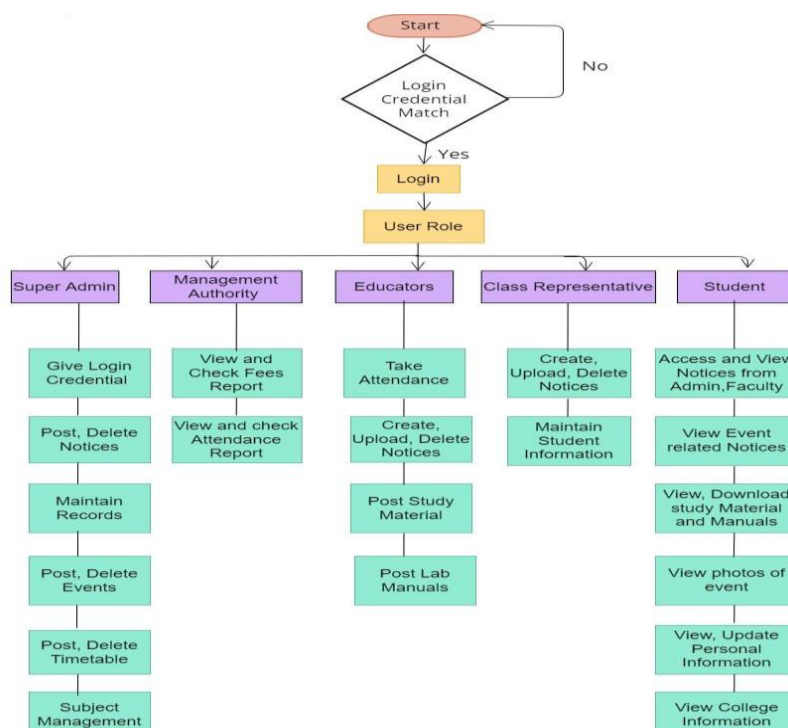


Fig 2: System Flow Diagram

VI. IMPLEMENTATION

To develop this application NodeJS and Express are used for Backend. NodeJS is regarded as a full - stack JavaScript for serving both the client and server side applications. NodeJS used to handle API requests and also provide libraries for Android Applications. Express is a backend web application framework for NodeJS and it helps to provide server-side logic to mobile applications. mongoDB Atlas is an open source NoSQL database management system. It provides Infrastructure-as-a-Service that allows the hosting of data in the cloud with all the benefits of cloud computing, including scaling and high availability.

This application developed using Flutter UI Toolkit. Flutter is an open-source software development kit which enables smooth and easy cross-platform mobile app development. Dart programming language is used to make user-friendly User Interface. Heroku is used to deploy, manage and scale this application. Heroku is a container-based cloud Platform-as-a-Service (PaaS) that enables developers to build, run, operate applications entirely in the cloud.

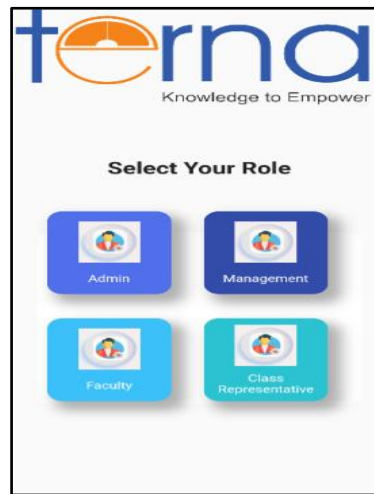


Fig 3: Role Page

It is a first page before the login screen where the user of the system select its role and with the help of given credentials he/she can login with the system.

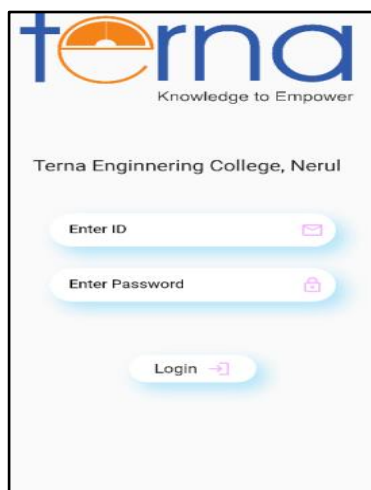


Fig 4: Login Page



Fig 5: Admin Dashboard



Fig 6: Mgt Dashboard

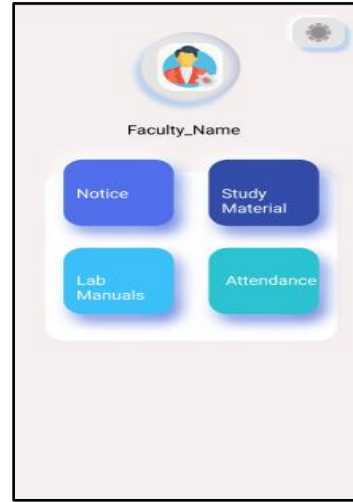


Fig 7: Faculty Dashboard

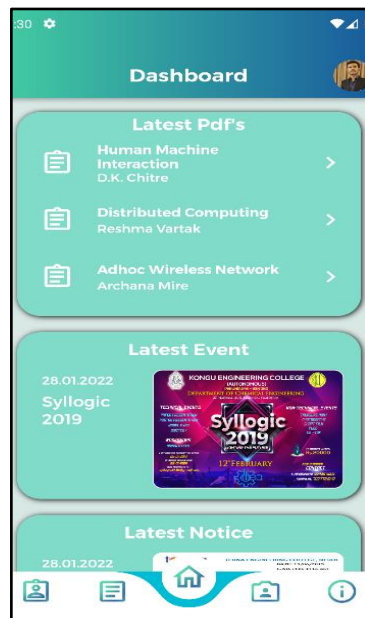


Fig 8: Student Dashboard



Fig 9: College About

VII. CONCLUSION

The College Administration and Management System (CAMS) is the system that provides appropriate information to users based on their role in the system. This system is convenient, efficient and user friendly. It is very helpful to students as well as faculty to access information on time. Following are the features of the system:

- 1] Notices posted instantly.
- 2] Information and essential records of the students and faculties are available in a just single click.
- 3] Easy access to study materials, timetable, event photos and college campus information.
- 4] This system gives users the flexibility of changing a single entity/subject or any information relevant to timetable.

VIII. FUTURE SCOPE

This system can be available on Apple Devices also. In the future, Placement tracking system is also available in this system where students can enter their academic details and upload resume and in the Admin app some authority can track the interested student for campus placement drives. We will create the master and slave database structure to reduce the overload of the database queries.

IX. REFERENCES

- [1] Aman Saxena, Ms. Pawandeep “Design and Implementation web based Online Notice Board Application”, Panjab University, Chandigarh(2020).
- [2] Mr. Sivasagar, Mr. HarshithGowda, Mr. Sandeep Hegde and Ms. Sandhya Hedge, “ERP for College Management System” International journal of Advanced Research in Basic Engineering Sciences and Technology (IJARBEST) Vol.4, Issue.8, August 2018.
- [3] Mr. Veeramanickam and Dr. Mohanapriya, “Research paper on E-learning application design features using cloud computing & software engineering approach” International Conference On Information Communication And Embedded System (ICICES 2016).
- [4] Peter E. MATHIAS, Fasola P. ABIFARIN and Shake A.IMAVAH “Development of an Android Mobile Timetable Management Application”, Conference or Niger State Chapter or Nigerian Library Association (NLA 2019)
- [5] Amanze Chibuike, Nwoke, Bethel Chinenye and Eleberi Leticia E. “An Online Departmental Fee Management System”, International Journal of Computer Sciences and Engineering Open Access (JCSE) Vol.-8, Issue-2, Feb 2020.