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Managing Institutional Records by Cloud-Based CRM

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ABSTRACT

The word CRM can be exemplifying as a customer relationship management system to develop long-term relationships between business and customers. From many proclaims, it specifies that various processes and techniques are used in gathering requirements, designing, implementing, and testing for the project on record management system. This project aims to solve these current problems, as in the current Management System it is not facile to collate, cohesion, and transform the student's data necessary for creating a standardized system. There are so many reasons for this dilemma, including educational structure, improper management of personal data, and several formalities resulting complexity in managing the whole critical business operations. Unlike on-premised CRM structure, the on-cloud applications accessible to use just in clicks and immediately available all over at one's convenience. Thoroughly based on cloud computing, customers can use it without installing any kind of software in a physical machine. Concede the data access directly through the cloud as per need. Determine the administration job much easier and agile in the large enterprises as well as small companies. To demonstrate the functionality of on-cloud business I made an application for an institutional record management system to bring about students' satisfaction. It intensifies institute recommendation by effective student lifecycle management which can help in saving money and reduce workload.

Keywords*- Cloud computing, On-cloud CRM, Institutional records, web service.*

1. INTRODUCATION

Record Management system is an essential software used by institutes, schools, colleges on daily basis. CRM is a model managing all interactions with current and potential customers in an organization. It includes technology to synchronize, maintain, organize and automate the service provider to customers. Unlike traditional CRM, cloud-based CRM does not need any physical infrastructure setup, software, and hardware requirements of large database, server, and compute resource. [1]On-cloud CRM provides the whole infrastructure in a single application and works on web-based access by login in just one click. Thus, helps in making the task of an administrator easier and the developer by providing a better platform to develop an application for customer satisfaction. The main two objectives are retentions of current students with attracting new students. Reduce the paperwork and manual workload. This is akin to enterprise resource planning (ERP) applications, which focus more on business communication and customer operations. [2] [3]Lack of education about the on-cloud CRM system and anxiety of budget cause in people not utilizing the system. Many institutions practicing and investing in out-dated software and hardware found overworked and ineffective IT staff to lower IT cost. But cloud computing comes in the picture to change in thinking to pay-as-you-go from on premised buy-and-own. The purpose to create software for all institutions is to reduces the complexity and time required for interconnectivity between different modules to perform operational tasks.

The proposed system can be used as a web-based application for manage student information.

- Records moves from Candidate Enquiry to Student identity, when protentional customer become current customer.
- Sending Emails automatically to all Candidates when a new course is added in the institution.
- Generate Emails to Faculty and Parents, when a student is absent for more than 2 days continuously.
- Maintain Accurate Attendance Records.

The system is capable of storing the course details, faculty, and students record in a dynamic way. If any student's attendance is found to be not up-to-mark in a particular subject, it generates an alert email to the parent's ID regarding the student's attendance. This application also updates students and teachers for any change in schedule like the addition of new courses, activities, new faculty allocations, and changes in timing. [4] [5]

This project made the process faster, more efficient, and improve the productivity of the institute.

- It provides an email integration feature to record management, can send email through the system to all contacts in the access list.
- Multiple users enable to access shared files and documents within the software.
- CRM tool for user management increase efficiency and effectiveness of user's work.

- Calendar enables faculty and students to see their appointed tasks, classes, labs, and meetings have already fixed as scheduled.
- Provides the performance and attendance tracking system for all students and staff on regular basis.
- Certain roles and restrictions are assigning at a personal level or user profile. Like personalized tasks for teachers, students, and administrators.
- Customizability, enable to change system structure as per need of clients.

Cloud computing administering the idea of storage service for software applications and data on web access from anywhere the client wants. In most cases, additional storage for record management has to purchase in many institutes, the significance of the contacts, the number of details, data, or documents are immeasurable and cost extra after the exceed of limit. Many institutions indicated the lack of knowledge and budget for CRM system cause in proper utilization of resources. But on-cloud CRM implements the concept of pay-as-you-go, which will charge only for how long you used services. [6] [7] [8]

In the proposed system, the developed system provides the facilities to reduce the paperwork and time-saving project to generate the concrete result from the stored information. This system administered the best user-interface application for all aspects of students, teachers, and institute. This project is conducive for the institution to get information as soon as possible at one's convenience and likewise alert the parents by sending mails through the on-cloud CRM. Eliminate the manual endeavor, utterly computerized and easily customizable. [9]

Figure 1 The diagram shows different users and their different access for interaction within the system with the help of entities. Unlike students and faculty, Admin can have all use case entities.

- It is a highly reliable and flexible project.
- It provides security to the level where all the files are secure with the best security level in a cloud-based system. [10] [11] [12]
- It makes the relationship with the customer more reliable by providing the best platform to work (PaaS).
- Cloud platform is easy to use, pay-as-per- you go, and flexible scaling for resources.
- Collaborative system, keeps track of the work which is being performed by the cloud to look after the data which is being processed.
- It minimizes the time required, cost of hardware and software operations.

2. MODULAR STRUCTURE

There are several users in the record management system, but the software is principally divided into three modules are students, teachers, and administrator. Each of these has specify roles, restrictions, and own set of features. The System Design applied to this project has various designed concepts like individual division for all modules that independently functioning in the same software. [13]

System structure update information of students and faculties on daily basis. All updated information can be viewed by admin, also viewed by students and teachers according their set of features. Most of roles managed by admin than teachers have controll over, students have least roles to control the system. As taking example of attandance record management of the students, all three users (admin, techers, students) can look attendance details but this imformation is updated by subject teachers. Students can check their attendance record, techers wil genrate the alert meaasge or email to parents and students for short attendies. This flow of sturcture reduce the workload and save time.

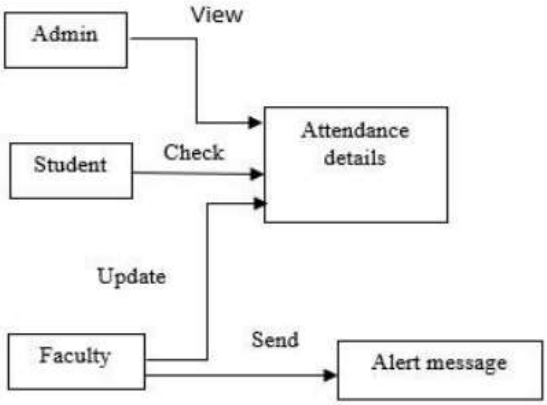

Figure 2 Attendance module representation

- Product Features
  - Attendance and marks updates by respective subject teachers for all students.
  - All student can able to view their attendance and performance status for their respective courses.
  - Techers and students will be able to apply for leave application directly from the system.
  - Students can communicate with faculty and other students too via email servicing.
  - The only administrator able to view all information like updates, shared file and documents, scheduled meetings or classes, attendance, fees, and personal details.

2.1 Student

Students identified by the subjects or course they have chosen at admission time. Each course or subject class assigned to a particular team of staff. Therefore, many students are enrolled in the same type of course and they have their own unique username and password to access the software.

- Student information:
  Each student can access to view their own personal information only. The information that they provide at time of admission like name, email, contact, address, subjects they enrolled for.
- Attendance and Marks information:
  Attendance always taken by subject teacher on daily basis for their classes. And these attendance records can only view by all students for each course they are enrolled in. If any student found as attendance shortlisted student by specified threshold. Here, an alert message will be sent to his/her parents to notify them. This service is also used for performance views for each subject.
- Notifications and events:
  Students can view upcoming events and classes that scheduled for them. Admin and faculty declare the important information through this service. All the holidays, labs, and assignments can be viewed from the calendar. Calendar page is timetable scheduled for students by the teachers which consist of days, dates, and time of meetings for particular class and lab.
  The student should have the following features:
- Only view the attendance and performance progress in each subject they have enrolled for.
- Each student can get a notification or message from the admin and teachers.
- Can communicate with teachers and students through a mail service.
- Share the file and folders in the system, and also view the shared files.

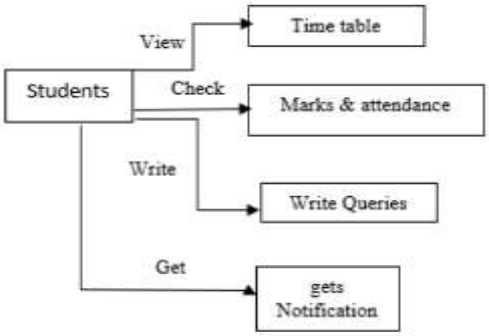

Figure 3 Student Panel Access Control

2.2 Staff

Teachers belong to their respective subjects and tasks assigned by the admin; teachers are assigned to classes and labs for a particular subject. Each all them have their own login ID and password to get access to the system.

- Information:
  Faculty will always have access to information like personal details of students and numbers of students under their course. They can update the syllabus plans, classes, and labs scheduled for all students. As subject teachers they can get details about students enrolled for their own interested subjects.
- Attendance:
  Always only a subject teacher can update the student's attendance records of the whole class on a day to day basis during the class, but students only can view their marks and attendance records. The teachers can generate the mails to notify parents and students regards the performance process and attendance reports.
- Notifications and events:
  Teachers also have notifications by admin for the future plans and tasks assigned to them with the end-line. Teachers send messages to students regards the classes and labs for their own subjects only. Each teacher accesses the contact list of students; therefore, students and their parents can get an alert message with the help of mail or phone numbers they have given.
- Calendar:
  This can be updated by admin and teachers for assignments and for scheduled classes that they have to conduct. All event-list can get from this service, this also helps in scheduling the classes and labs for free periods easier and faster.
  The staff should have the following features:
- Update the attendance and marks for each student under their subject.
- Access to view contact list and personal details of students.
- Can send application leave to the admin and also send alert messages to students' parents regards the progress and attendance reports.
- Schedule the classes and labs by the calendar page.

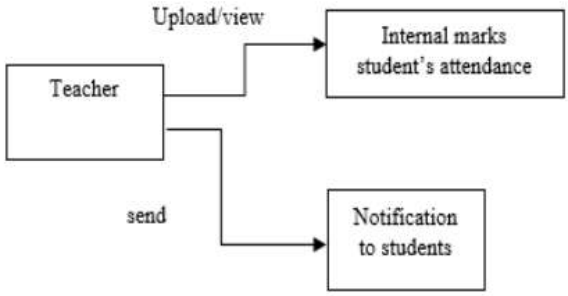

Figure 4 Staff Panel Access Control

2.3 Admin

The administrator is responsible for maintaining all the records of courses, students, teachers, classes, and labs. Admin also responsible for assigning and scheduling tasks for all staff and students. He/she have all access to information like personal details, students, and teachers list in the institution with their contacts and e-mails. [14] [15]. Admin can update the calendar and modify the records of attendance of students and teachers. All records in the database potentially create complexity in shorting students and faculties. All information saved in the database with different tables of lists in the admin panel of the system. So, by search admin can view the profile of specific teams and people that make more efficient data access.

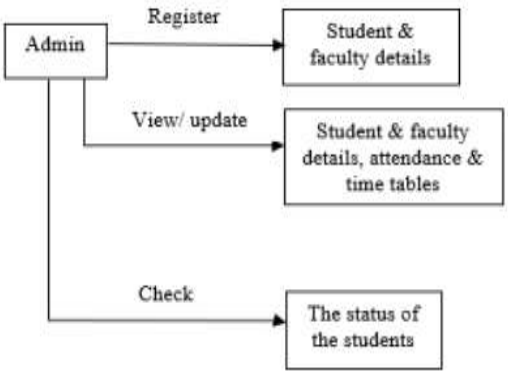

Figure 5 Admin Panel Access Control

3. ARCHITECTURAL DESIGN

The Architecture of this project is on use of fundamental technology of the cloud to share its resources safely and cost effectively. A cloud infrastructure used for running different web application which contribute in cost-efficiency of this project. This cloud-based architecture delivers web application to make profitability of IT organization. It establishes the framework for software development by the integration of numbers of software and hardware components in the infrastructure. The architecture comprises of 3 major modules used in the system (admin, student, and staff) to establish 3 tier architectural design. Communications, coordination, and cooperation in between modules connected by this designed structure because of self-explanatory feature of the software. The Admin responsible for all managements in the system with access of whole system in single hand. The staff have less functions in hand compare to admin dashboard, this role includes the management of student's attendance, reports and assignment assigned. Student's dashboard has only access to view the information and scheduled tasks for particular subject they have enrolled in.

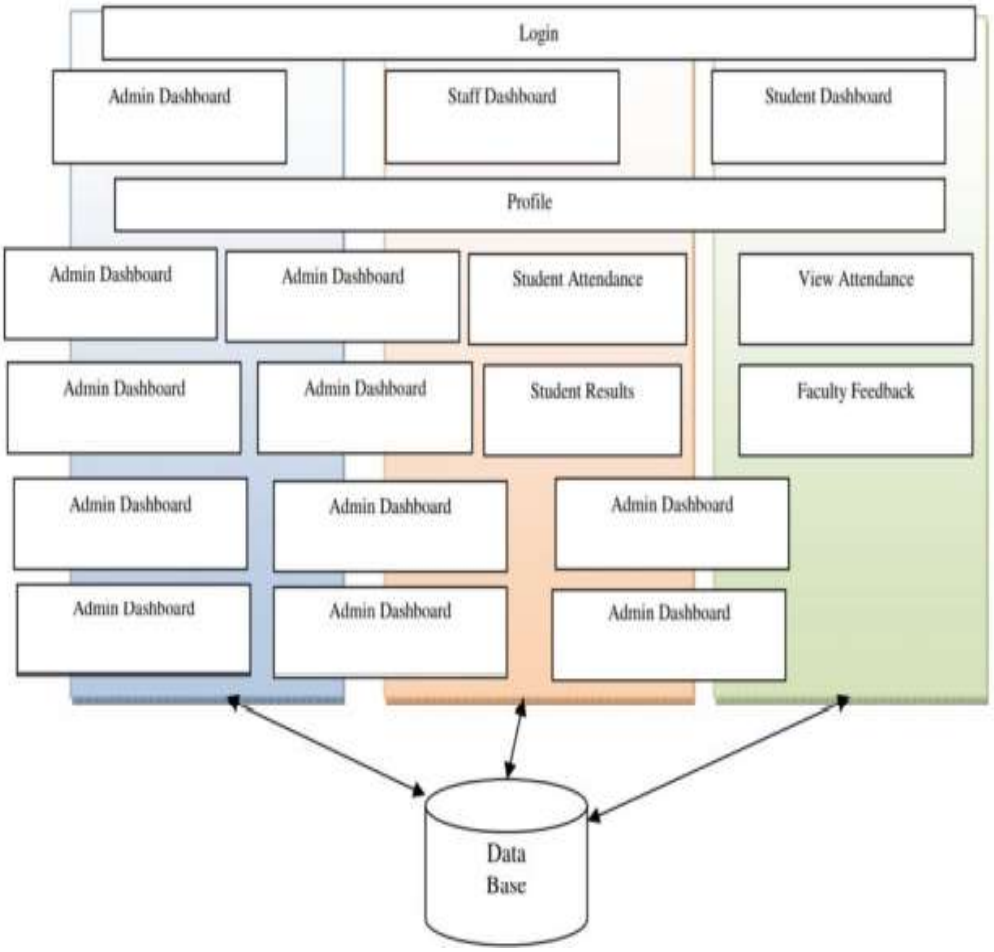

Figure 6 The 3 tiers comprise of presentation layer, application logic layer and data layer.

4. CONCLUSION

The emergence of cloud computing and CRM based applications can reduce paper use and also maintain the record easily. And as we all know that student is the most significant asset for the institution this project results in multiple of student's recommendation to others. To achieve a competitive advantage for the institution, CRM gives us the guarantee. Additionally, system deployment in the cloud reduces the reliance on spreadsheets and desktop databases genesis of cost shrinkage. The enormous advantage of the CRM system in the institution is that it provides the dexterity of evolution to tussle with the student's problem. CRM system is quicker and more cost-effective, easier to understand, and deficient management requirements. Most available modern solutions have great disadvantages in terms of requiring a high-cost infrastructure or limited functionality. Implementation of the on-cloud CRM in the institutions, we can conveniently analyze the performance of the staff and students and, by using the traditional method for checking the attendance of the scholar manually consume a lot of time and endeavour. So, we endowed to save both time and effort by using Cloud-based CRM. Record management systems that have an interest in generic solutions and are prepared to devote auxiliary in customization of the system, regular communication, and regards to activities in the institution. Web-based CRM allows to develop the custom application; gather the students and staff information automatically and it saves all kind of information like, when a particular staff or student joined the institution or at which time-date he/she enrolled the class or institution and it save the details in a dynamic order which help in the reduction of the manpower. So, by using CRM we can see that we have many benefits wastage of paper is reduced and better performance, effectiveness, productivity, and efficiency.

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