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INTERNATIONAL JOURNAL
FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

International Journal for Research in Applied Science & Engineering Technology (IJRASET)

A Web Based Information System for College

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Abstract: An Information System is a computerized database of information organized and programmed in such a way that it produces regular reports on operations for every level of management in an organization. It is usually also possible to obtain special reports from the system easily. The system is a web-enabled software designed to manage the entire operations of the college. Information Management Software is a simple yet powerful one joint integrated platform that connects all the various departments of an institution like Administration, Account, Student section and many more specialized modules.
We have seen over the years that the process of notice boards, important notification about academics is done manually almost across all educational institutions. The process is not only time consuming but also inefficient. Today, we do not need to maintain paper based Notice boards. An Information System provides an easy way to automate all the functionalities of an organization, and provide full functional reports to top management and organization with the finest of details about any aspect of organization. Information System also provides an interactive environment where you can manipulate data and information about organization easily.
Keywords: College, Data, Education, Information, Interface, Maintain, Management, Management Information System, Record, Student, System, Work.

I. INTRODUCTION

Colleges and universities are important base for teaching and research, and for cultivating talents. College Student management is an important part and measure basis for the level of the college management. Some trivial and painstaking works need great workload and no mistake such as students basic information, class management, score management and so on, the staff will spend significant time and effort if accomplish these manually. There are outstanding advantages via using computers to manage student information such as rapid search, find convenient, high reliability, large memory capacity, confidentiality, long life and low cost and so on, which can greatly improve the efficiency of student information management, and promote college management to scientific, information technology, and standardization renovation.

The design and implementation of a comprehensive Information Management System and user interface is to replace the current paper records. College Staff are able to directly access all the data of a student through a secure, online interface embedded in the college's website. The system utilizes user authentication, displaying only information necessary for an individual's duties. Additionally, each sub-system has authentication allowing authorized users to create or update information in that subsystem. All data is carefully reviewed and validated on the server before actual record alteration occurs. In addition to a staff user interface, the system also plans for student user interface, allowing users to submit enquiries online thus reducing processing time. All data is stored securely on SQL servers managed by the college administrator and ensures highest possible level of security.

The system features a complex logging system to track all users' access and ensure conformity to data access guidelines and is projected to increase the efficiency of the college's record management thereby decreasing the work periods needed to access and convey student records to users.

This system has been established for college and is a web based application that aims at providing information to all the levels of management within an institute. This system can be used as an information management system for the college. For a given student/staff (Technical / Non-technical) the Administrator creates login id & password, using these student/staff (Technical / Non-technical) can access the system to either upload or download some information from the database.

The front-end will be HTML pages with jQuery. Validation plugin for client side validation whereas all business logics will be in PHP and resides at middle layer. These layers will interact with third layer of database, which will be MySQL database. The web server will be Apache v2. To start working on this project environment required is a development machine running Apache v2 web server, MySQL database server, PHP and Laravel Framework as development environment.

II. ADVANTAGES AND DISADVANTAGES

A. Advantages are as follows

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1) Most of the work done by the Management and the Administration as well as the information and data related to students becomes paperless with decreasing the use of paper for working process.
2) It is a time productive method since all the records are preserved in the system and so it does not require the candidate to visit the college habitually for minor work.
3) All the data is centralized and can be management efficiently.
4) The Management can take student related decision on certain matter based on the records present in the system in much more organized and regulated manner.

B. Disadvantages
1) Changing certain core policies of the college or making changes related to revising university rules is a bit of tedious work to implement into the system.

III. TECHNOLOGIES

A. Ubuntu
Ubuntu is an open-source operating system based on the Debian GNU/Linux distribution. Ubuntu incorporates all the features of a Unix OS with an added customizable GUI, which makes it popular in universities and research organizations. Ubuntu is primarily designed for the use on personal computers, although a server edition does also exist.

B. Apache Web Server
Apache Web Server is designed to create Web servers that have the ability to host one or more HTTP-based websites. Notable features include the ability to support multiple programming languages, server side scripting, an authentication mechanism and database support. Apache Web Server can be enhanced by manipulating the code base or adding multiple extensions/add-ons.
It is also widely used by Web hosting companies for providing shared/virtual hosting, as by default, Apache Web Server supports and distinguishes between different hosts that reside on the same machine.

C. PHP-MySQL
PHP is the most popular scripting language for web development. It is free, open source and server-side, which means that the code is executed on the server. MySQL is a Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). It is also free and open source. The combination of PHP and MySQL gives the opportunity to create just about any kind of website - from small contact form to large corporate portal.

D. Laravel
Laravel is a prominent member of a new generation of web frameworks. It is a free, open-source PHP web framework, intended for the development of web applications following the MVC model. Some of the features of Laravel are a modular packaging system with a dedicated dependency manager, different ways for accessing relational databases, utilities that aid in application deployment and maintenance, and its orientation toward syntactic sugar.

E. Git
Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It is responsible for keeping track of changes to content (usually source code files), and it provides mechanisms for sharing that content with others. Git is not a mandatory requirement of this project as it used to manage the content of the project with ease.

F. GitHub
GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features. If a team has a shared repository on GitHub, they could conceivably use GitHub without ever looking at its website. However, the website provides a lot of value on top of the core Git repository. GitHub also developed graphical Git clients: GitHub for Mac and GitHub for Windows. Each of them is an application that lets you interact with Git repositories without using the command line. The following software is a not necessary tool for developing this project.

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IV. ACTIVITY DIAGRAM DESCRIPTION

The Information Management System (MIS) provides a simple interface for maintenance of college staff and its accounting and student information. The creation and management of accurate, up-to-date information regarding student is critically important in the college at the time of admission. Our system deals with all kind of staff details (technical staff) or (teaching staff), academic related reports, students detail, accounting reports and other resource related details too. It tracks all the details of admission candidates from the first day to the end, which can be used for all reporting purposes, progress of the work, and complete student personal information. In addition, it will have college details such as courses provided by college, number of departments, staff details in all aspects, and the various academic notices to the staff updated by the college administration. It will also aid the management to explore all the administrative activities happening in the college, different reports and queries can be generated based on vast options related to staff, batch, college, and accounting and even for the entire college.
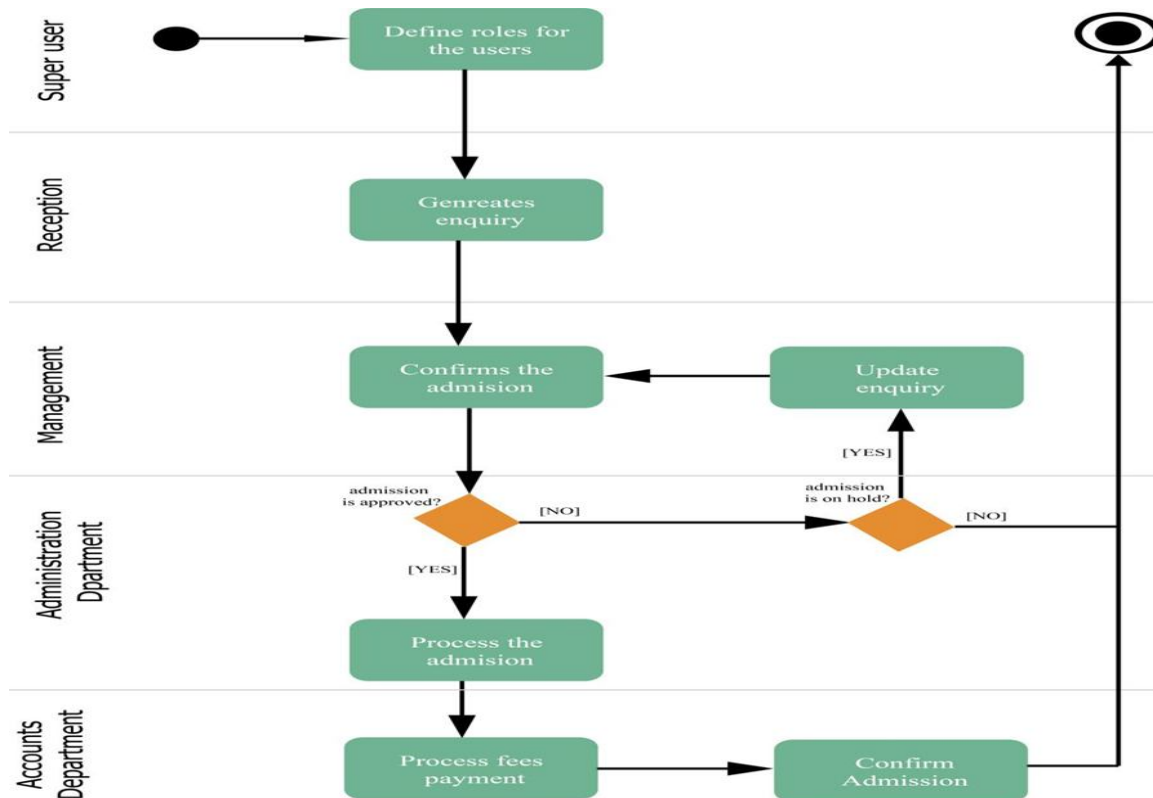

Figure 1 : Activity Diagram of Management Information System

The Super User is responsible for creating different users and defining roles for the users, managing the user accounts like any changes in name, email ID etc. The super user also adds new courses and defines to which department the course belongs. The super user also updates the college related information like calendar of events, information regarding any other events that arise in the college. The administrator will check all the updates i.e. student updates, faculty updates, exam updates etc. The administrator has the highest level of authority in the system.

The Receptionist is accountable for generating the enquiries for the students who wants to take admission in the college. The enquiry consist of two types of forms, one for the student who wants to enrol admission in the first year, and the other form is for the students who wants admission in direct second year. For first year student the form require the SSC, HSC, CET and JEE marks whereas for second year student the form requires the SSC and Diploma marks. The receptionist also has the authorization to view the number of enquiries produced. Once the enquiry has been generated, it is send to the management for further agreement. Once the enquiry has been approved by the Management them the receptionist is responsible for updating the rest of the details of the student.

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The main liability of the Management is to confirm or reject the admission of student once the enquiry is generated. The management can also write comments on the enquiry in case if the management wants to approve the enquiry after some time. Once the enquiry is produced, the management can view all the student records and view the student fees record. It can also view the list of enquiries generated and the list of students who have taken the admission. Once the management sanctions the enquiry then all the details of the students are submitted to the administrative department.

The Administrative department is responsible for handling the admission process further once the management has sanctioned the enquiry. The administrative department validates all the documents submitted by the students. The Administrator department is also in charge for entering the new student, promoting the student from one class to another, from one semester to another and from one year to another. It also copes with the student accounts as if any changes regarding to the name, address etc. When the management agrees the enquiry, it will be then displayed in the list of the admission candidates and then the administrator needs to edit that enquiry to update the rest of the student's details.

Once all the admission process has been completed and all the students documents have been validated then it is the duty of the Accounts division to enter the fees record of the student. The accounts department generates the fee receipts, which is different for first year and direct second year student. Once the student pays the fees, the account department approves the student by confirming his/her admission.

V. CONCLUSIONS

The project entitled as 'A Web Based Information System for College' is the system that deals with the matters related to process of admission in institutions. The application provides proper information to users according to the desired service. The project is proposed keeping in mind the day-to-day problems faced by a college. Setting out of our application will certainly help the students to reduce needless wastage of time in personally going to perform various tasks during admission. Attentiveness and right information about any college is essential for both the development of student as well as staff. Therefore, this serves the right purpose in achieving the anticipated requirements of both the communities.

In this system, the authorized users get their desired information without any postponement. The information that is stored in the database can be accessed any time by using this system and there will be no depletion of resources in college. The objectives of this research are achieved and they are working well. This system assists in automating the existing manual system. This project helps in ecofriendly work environment since the use of paper can be reduced largely. It can be monitored and controlled remotely as well as provides precise information. Also, this system contains complete accounting information system with all required facilities. Information gathered throughout the years can be saved and can be retrieved at any time.

As a final mention, the team is excited about the progress made in the development of this system. It is a product which can be expanded to a greater extent, as many more upgrades can be made like adding a fees payment module which allows the users to pay the fees online using debit/credit option, creating a chat box where different users can communicate with each other and many such other modules can be added. The current project satisfies all of the major requirements, and the advance development can lead to a significant assistance for the education society.

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