Web Based College Information Monitoring System using Java (DigiCampus)

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Abstract: As we know the process of manual work that has been carried out across almost all educational institutes. A paper based approach is followed for profile forms, marking attendance, report generation, where the students fill up the form and sign on the attendance sheets manually; teachers generate various reports by following manual system. This data is then manually entered into the system. Managing the profile and attendance of the students during lectures and generating the results is a difficult task and it becomes more difficult during the report generation phase and manual attendance monitoring produces errors and also wastes a lot of time. Today, we need not maintain pen and paper based registers for student/staff information management. For this reason, the development of this application is come into existence using Java and Android platform. Maintaining all the information of the student like profile, account, library, attendance and the information of the staff/other members of the college on the web is safer, reliable and remotely accessible. The aim of the proposed system will be to maintain all the data on the web for reducing manual works of the college staff members and providing centralized data organization for maintaining all the data.

Keywords: Web based College Information Monitoring System, College Android Application, k-Medoid Algorithm, Genetic Algorithm.

1. Introduction

Work of taking profile form, library books management, admission process, examination details, attendance in classroom, creating attendance report of students (i.e. weekly, monthly); Circulate notice in every class is avoided by in proposed system. Teachers can take profile forms, attendance of students via Android App and also if teacher is not having smart phone then he can fill attendance through website for further report generation. In manual system, teachers create report of every students of every subject for detention list. But in proposed system, it will create report of every student automatically. If teacher wants to circulate any notice then teacher ash this notice on website, app or send to every student thorough mail. Students can also install app on their smart phone and view notice, exam timetable, result. The title of the project is Web Based College Information Monitoring System (DigiCampus). Proposed system is an Intranet based system. That aims at providing information to all the levels of management within an organization. College Monitoring system can be used as an information management system for the college. For a given student/staff (Technical / Nontechnical) the Administrator creates login id and password, using these student/ staff (Technical / Non-technical staff) can access the system to either upload or download some information. The front-end will be Java for client side validation whereas all business logics will be in css, js, Ajax, Jason, Hibernate resides at middle layer of the system. And these layers will interact with third layer of database will be MySQL database. The web server will be Apache. To start working on this project main environment is a server having Apache as web server required, MySQL as database and Java as development environment. I wish you the best of success.

2. Objective

Objectives of system as follows:

- To adopt a proven, integrated, and reliable information management system that supports improved all institutional practices and facilitates, data integrity and good decision support.
- To provide technological tools for faculty to perform their jobs in an effective and
efficient manner and also provide efficient tool for students and staff as well.

- To allow flexible access to administrative.
- To access academic data to satisfy regulatory of each person in the institute and institutional analysis needs.
- To provide personalized opportunities for access to relevant administrative (HOD / principal/ account)and academic information.
- To improve efficiency in reporting information as required to external agencies or authorized users while protecting the confidentiality of individual information.
- To recognize student immediately using PRN no.
- To implement a system that is owned by the functional departments, increasing functionality, accessibility and accountability for faculty and staff.
- To send important notice, mails to the students via home page
- To allow access to historical data from anywhere for efficient reporting to better understand the students and the institution.

3. Overview of Paper

This paper describes the application and its functions. It provides a primarily non-technical description of the project towards external audiences. This paper includes statics such as data requirements, functional requirements, and a general description of the application and its intercommunication with users from the perspective of the client. Also another part of paper includes information such as external interface requirements, performance requirements, and any other technical requirements needed to be design the software and satisfy all the user requirements.

4. SYSTEM DESIGN AND MODULES

- Working of Proposed System:

The working of different modules of the proposed system is described below:

a. Admission Process:

This protocol reduces users inconvenience in the login process. This protocol has a white list of IP addresses for known user. If a user sees that unauthorized person has tried to log in to his account and have made failed login attempts then the user can add that IP address to the blacklist. This list may be made only by tracking the log information. This protocol also checks the number of failed login attempts from unknown system. If the login attempts are more then it blocks the user.

b. Student Database Management:

The Proposed System will maintain student academic information for their entire academic curriculum. This module is used for complete student record keeping right from their admission and entire academic years till placement. Each activity of the student is recorded in the System’s Database.

- Student’s data are stored centrally and managed centrally in systematic way without duplication.
- Proposed System maintains a complete Academic Tour of each student.
- Proposed System also maintain all student transaction information (e.g. Fee History, Certificate History etc.)

- Different Statistical Reports can be obtained through systems which can be useful in decision making

c. Library Management

Accession Register Management

- Book Category
- Publisher
- Supplier
- Book Section & Rack Management
- Add new Books / Journals / Reference Books / e-books

List of Members

- Students
- Staff

Transaction Management

- Issue Books
- Return Books
- Fine
d. Account Section

Organization under comes great responsibility of hiring new employees. With that processing their salaries time to time by keeping in record of their leaves, overtime, performance, attendance and etc. So as many things are checked systematically so chances are increases of less accuracy. Using proposed system, Payroll management can be easily performed with clear, ease and accuracy. Employee Attendance, salary, Deductions, Overtime, performance criteria on average etc. All are managed online from anywhere with systematic and definite outputs. Staff attendance, Increment settings, Leave updating etc. are integrated with account management so no need of any manual checking and it is time saving. Hence manual errors are less. Thus college will quite know about their income and expenses easily and see more transparency in system.

e. News Board & File Sharing

Useful for sending emails in bulk and also in single. Students can get alert through the mails and any kind of notice / event scheduler or any new schedule for lecture decided can be known through mail. Even mass mailing can be done to all students for their routine up to date and to remain active in academic environment. Thus college will be very effective and growth of it will be affected by this small steps.

f. Report Generation

The important feature of the proposed system is to reduce manual work of the staff members or college faculties. So, the important feature of Report Generation will be available in proposed system. The faculties can generate any reports he wants i.e. Detention reports, Marks reports, searching and sorting methods for improving the contents.

g. Attendance Management

The Proposed system will provide a solution to maintain the attendance of the Students of the college including Academic Staff, Administrative Staff and Other Staff. These Module will provide you a systematic way of management for the attendance of your Students.

Some of Students attendance reports are as follows

- Student wise summary of attendance
- Date and lecture wise complete report generation
- Monthly report generation
- Subject wise reports
- Complete academic attendance
- Top Regular and Top Irregular students (Detention List)

h. Feedback System

The proposed system will provide a module of feedback system in which the students, staffs can give their feedback with a comment box. All the incoming feedback will visible for the higher authority (Principal/Director) of the college in feedback inbox. This feature is helpful in order to achieve the requirements of the students/staff. The feedback module will feature following module:

- Feedback subject or title
- A comment which will describe the feedback by the user
- The information of the sender will be hidden to higher Authority
- All the information will be at one place under the Feedback inbox

i. Reminder System

Email to bulk and single.

Benefits:

- Students: Students through mail can get notices, alert for upcoming events, attendance percentage, admission notice, academic projects/submission related notices. Just one click, Group emails is done which is very beneficial students as can know about details from any part of the world.

j. Software Setting
These are the system settings for the administrative purpose where admin can change the settings of different modules. According to their respective use, as per the college guidelines and decisions. proposed system provides flexibility to administration for setting parameters regarding the management i.e. user settings, Admin settings, Academic settings, etc. These settings are facilitate the software and do not constraint the management for organization Application:

• Manage information system.
• make Decision support system stronger .
• Common platform for Student, Teachers and Management.
• Upload, Download facility for Student, Parents, Teachers and Management.
• Simple and easy to implement .maintain free environment.
• Secure shared and personalized web based service.

5. Conclusion
In this paper, we proposed a new application for monitoring information of the students, staffs, and library. The results shows improvements in accuracy as compared to user-based paper-based approach. Moreover the proposed technique provides an easy way for generating reports and ease to access all students information with in a single minute. Student can also view notice about seminars, activities related to college using portal. We can provide as many input-output for general or specific domain.

6. References


