Automated Student Informatic System for College

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Abstract— Today, with the advent of internet, Technology has gone far beyond. A single click and you have everything at your doorstep. All the industries have adapted to follow computer-based systems. The Mission of Student Information System is to provide Integrated Information Technology Environment for Students, HOD, faculty, staff, and administration. Student Information System is web-based self-service environment for students, departments and administrative process too. This easy to use college administration web-based service will prove to reduce time spent on administrative tasks and also reduces effort of students by eliminating the manual work of filling forms. Student Information System tracks all the details of a student from the day one to the end of his course which can be used for all reporting purpose, tracking enrollment, progress in the course, completed semesters years, final exam results and all these will be available for future references too..

Key words: Student Informatic System, Struts2, MySQL

I. INTRODUCTION

The Student Information system is an automated version of Manual Student Management System. It can handle all details about a student. The details include Student personnel details, admission details, attendance details, academic details and exam details etc. Student Information System is a web-based application for students, faculty, academic staff and parents who want to get and retrieve student's whole information instantly via internet. The major benefit of this web portal is to store the student's information at one place (like SERVER) and it can be accessed via online interaction. The Student Information system web portal is to replace the old and traditional file (paper work) storing process. Instead of tedious paper work, students will be able to submit required information electronically, and the administration and departments will be able to generate quick reports.

A student Information system is a software application for educational establishments to manage student data. Student information systems provide capabilities for entering student test and other assessment scores, building student schedules, tracking student attendance, and managing many other student-related data needs in a school, college or university.

The mission of the Student Information System project is to create an integrated information technology environment for students, HOD, faculty, Staff and administration. Our goal is to focus on customers, services and integration for end users. Our east-to-use, integrated College administration applications are proven to reduce time spent on administrative tasks so you can concentrate on raising student achievement. Student Information System have to accept, process and generate reports accurately and any point of time any user can get the student information.

II. OBJECTIVE

Student Information system is a web application software design for educational establishment to manage student's data. It provides capabilities for entering student's data and tracking attendance as well as test scores within the institution. The basic idea behind this system is to reduce the time taken by admission process in second, third and fourth year. Hence, Web acts as a channel in accessing student information system without any hassle upon viewing any data. It provides the online interface for students, faculty etc. It also increases the efficiency of college record management. Also Decreases time required accessing and delivering student records and time spent on non-value added tasks and makes the system more secure.

Student Information System web application is built after analysing the requirements pertaining to adding student information, updating student information, maintaining student information, deleting student information, and viewing student information. It also provides with advanced search facilities and facilities to create authorised users.

III. EXISTING SYSTEM

Previously, the admission process was completely manual. It did not give us the flexibility for updation process, viewing student information anytime, maintaining entries of students etc. It also did not give provision to departments to maintain defaulter, Upload notes, assignments and videos, Midterm Marks and Semester marks of students in an easy way. Also it did not provide departments to send instant SMS for any updates regarding individual student's defaulter and Performance in Exams. This system gave rise to many such limitations.

The traditional Admission process and departmental work was quite tedious and time consuming and not much effective to handle and maintain the student's data systematically. It also includes much of paper work. There is waste of resources and man power too. Observing this scenario of admission process and departmental work, the urge to develop Student Informatic System in a systematic approach came into picture.

IV. LIMITATIONS IN EXISTING SYSTEM

(1) Filling up admission form for every year.
(2) Maintaining student's record manually through paper work.
(3) Unable to update Student's data by Student in between the year.
(4) Difficult for student to view his personal information, defaulter and marks anytime.

(5) Summarizing data and writing reports takes lot of time.
(6) The same data gets repeated over and over sice staff finds it hard to keep track of documents and information.
(7) Since data is stored in filing cabinets it is freely available to everyone and there can be misuse of data of it falls in wrong hands.
(8) There is inconsistency in data since data might get misplaced during manual filling and cannot be preserved properly for future use.
(9) Occupies too much of space.

Since the number of students are growing and the management has to handle records of many students, it is facing little bit problems in maintaining the records of the students. Though it has used an Information system, but it is total manual one. Hence, there is need of upgrade of the system to that of the Computer based Information system.

V. PROPOSED SYSTEM

The Proposed system helps to make admission process faster through the web application thus making minimum use of paper. Students just have to fill up the form once unlike old System, and can carry forward that same data in following years for the Admission purpose. For this student has to use 'Student-id'. The system also auto-generates Unique Student-id which helps for future purpose like updating student data, admission for the next year and for viewing the information through login.

It also helps department to easily keep regular track of student's defaulter and marks and making it available through separate login facility. The proposed system consists of four authorized users for login. All four have different functionality- Admin, Office, Department (Class Advisor, HOD), Student.

It Manages Student Information efficiently. Also Adds, Updates & Deletes Students information easily. Trace Student Records through Search features. It maintains all the accounts of the students. Manage Security by providing authorized user name & passwords and Manage Database. Provides a proper registration system to the new students. Updates the information available to the departments at their desk whenever required in just a click away and can have access to the web application from anywhere so that student does not rely on college timings.

VI. AVANTAGÉS OF PROPOSE SYSTEM

(1) It minimizes Information Overload and Time effective communication between Administrator, teachers, and students.
(2) Auto-generation of Unique Student-Id.
(3) It encourages Decentralization with Centralized database.
(4) Cost-effective for College management.
(5) It simplifies Administrative tasks.
(6) Student Information system processes, stores, retrieves, evaluates, the Information and data.
(7) Provide meaningful, consistent, and timely data and information to end users.
(8) Promote vision of senior management to address opportunities for change.
(9) Update technology infrastructure for more effective and flexible delivery of new systems.
(10) Promote efficiencies by converting paper processes to electronic form.
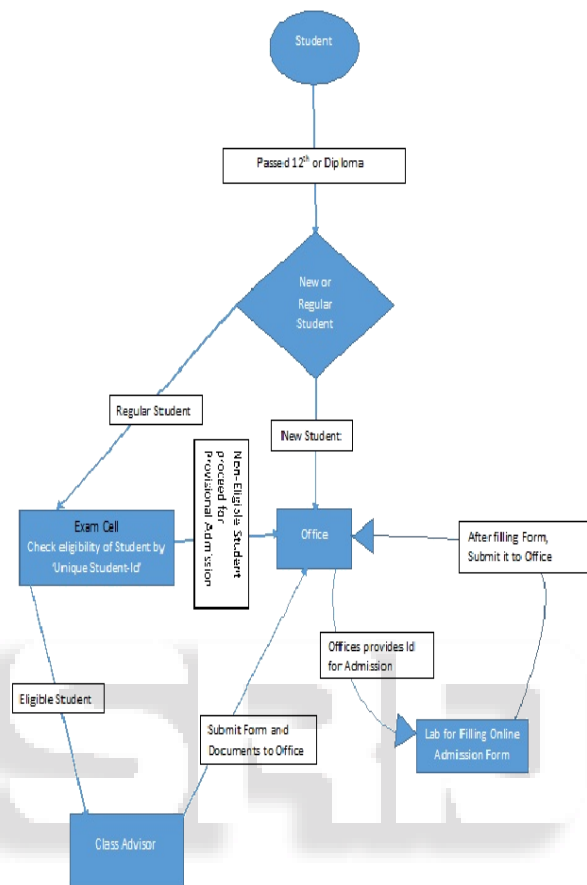
VII. FLOW DIAGRAM

Fig. 1: Flow Diagram

VIII. MODULE DETAILS

Module 1-Login by Admin: Responsible for maintaining database, backup of database and security to web application, change of passwords if needed. The administrator login can carry out the task of new registrations, insertion of student records, deletion of student records and updating of student records.

Module 2-Login by Office: Responsible for student's admission. System will generate unique student Id in 1st Year during Admission which will be later used for the student's consequent years during admission. The format for Unique Id is E.g. CS2015000001. CS is the Computer department code, 2015 is the year of admission, followed by a unique roll no. For E.g. ME2015000001 for mechanical and so on.

Module 3-Login by Department: Responsible for Maintaining defaulter, Exam Records and Sending SMS for the same. The departmental login is used to keep a track of students of their respective departments with the help of their Unique Student Id. All these departments provide various records regarding students. Most of these keep track of records needed to maintain information about the students. This information could be the general details like

student name, address etc. It is also work of departments to generate and maintain attendance sheet of all students and maintain defaulter list of each class. If the student is in defaulter then automatic generated SMS will be sent to all the available contact numbers of the ward. Department also keeps track of performance of students. It is also needed to fill marks of Midterms Exams and Final Exams of each student. On the basis of number of KT's the eligibility criteria for next year will be decided.

Module 4-Login by Student: Can only View data like personal details, defaulter, midterm marks, Notes, assignments and videos.

IX. TECHNOLOGIES USED

A. *Struts2:*

It is POJO (Plain Old Java Objects) based on development framework, which facilities testing and decoupling. Apache Struts 2 is MVC (Model View Controller) design pattern based user interface development (UI) framework. In Struts 2 when the user submits an HTML form, the input is sent to a controller that selects a Java class for execution. These classes are called actions. After the action executes, the controller selects a "Result" based on the output generated by the action class. The controller selects the results by consulting a special configuration file called as struts.xml. The result is normally a JSP, but it can also be another resource like a PDF file, an Excel file, or a Java applet.

B. *HTML:*

HTML is a hypertext markup language which is in reality a backbone of any website. Every website can't be structured without the knowledge of html. If we make our web page only with the help of html, than we can't add many of the effective features in a web page, for making a web page more effective we use various platforms such as CSS. So here we are using this language to make our web pages more effective as well as efficient. And to make our web pages dynamic we are using Java script.

C. *CSS:*

CSS Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML. The basic purpose of CSS is to separate the content of a web document from its presentation.

D. *Java script:*

JavaScript is considered to be one of the most famous scripting languages of all time. JavaScript, by definition, is a Scripting Language of the World Wide Web. The main usage of JavaScript is to add various Web functionalities, Web form validations, browser detections, creation of cookies and so on.

E. *J Query:*

One important thing to know is that jQuery is just a JavaScript library. All the power of jQuery is accessed via JavaScript, so having a strong grasp of JavaScript is essential for understanding, structuring, and debugging your code.
Hibernate:

Hibernate is an object-relational mapping library for the Java language, providing a framework for mapping an object-oriented domain model to a traditional relational database. Hibernate not only takes care of the mapping from Java classes to database tables (and from Java data types to SQL data types), but also provides data query and retrieval facilities and can significantly reduce development time otherwise spent with manual data handling in SQL and JDBC.

F. *MySQL:*

MySQL is the world's most popular open source database software. With its superior speed, reliability, and ease of use, MySQL has become the preferred choice for Web, Web 2.0, SaaS, ISV, Telecom companies and forward-thinking corporate IT Managers because it eliminates the major problems associated with downtime, maintenance and administration for modern, online applications. Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, critical business systems including industry leaders such as Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube, and Wikipedia.

X. FUTURE ENHANCEMENTS

Everything has its own scope of modification and improvement. In this project we will add more modules that support extra information & search facilities. Regarding internal organisation of the project we will improve its security features using advance technologies so that unauthorized user can't break the integrity and authenticity. Illegal access will be prevented and strictly prohibited. Further we will improve upon by replacing the unique Id with a Barcode so that it provides much more security to the data.

XI. CONCLUSION

This Project will serve as a useful approach to database to update, add, advanced search options for the authorized person. It serves as a helpful approach for the users. It reduces the time taken by the user to add, update, delete, view & search the information. Thus the project provides a user friendly interface. The mission of the Student Information System project is to create an integrated information technology environment for students, HOD, faculty, Staff and administration. Our goal is to focus on customers, services and integration for end users. It reduces the man power required. It provides accurate information always. Malpractice can be reduced. All years together gathered information can be saved and can be accessed at any time. The data which is stored in the repository helps in taking intelligent decisions by the management. So it is better to have a Web Based Information Management system.

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