

AN ANALYSIS OF ONLINE ERP SYSTEM FOR EDUCATIONAL INSTITUTES

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ABSTRACT

In an institute there are various departments and each department handles all institute information and student database. These departments are interlinked or interdependent. Current Institute Management System is facing problems of interlinking and data repetition. To overcome these problems we present Advanced Online Institute Management System which is centralized and automated. This system is very useful for easy user interface and utilizes powerful database management and retrieval and manipulation of data. The main objective of this system is to handle all the activities going inside an Institution without much effort.

Keywords: *Automated, Centralized, Database, Interlinked, Interdependent*

I. INTRODUCTION

Every educational institution has to maintain a management system for various aspects which may include performance analysis, term wise result, student profile, fee structure, co-curricular activities, faculty information and many more. Managing all these aspects manually on paper becomes very tedious and time consuming. In a manual system there is high possibility of loss of data, data redundancy and misplacement of collected data in the form of paper records in order to address these drawbacks there is a need to design and implement ERP system in educational system where a college staff can track a student profile in all aspects of academic development. Online ERP system is a web based system which implements an interactive and user friendly interface for an educational institute. The purpose for design and implementation of this system is to replace current manual system of educational institute with an interactive and automated web based system. This ERP system also stores and manages data accurately and efficiently which is persisted over a long period of time. ERP system provides single point of access to all administrative system of educational institutes. ERP is transaction processing system which performs and records the transaction for educational institutes.

II. LITERATURE SURVEY

ERP is nothing but the Information system which actually combines with advanced management thoughts, methods and instruments. Only if modern management theories and methods integrate into ERP, it can play an

important role in management and help enterprises make decisions [2]. This paper mainly focuses on ERP (Enterprise resource planning) to be implemented in colleges and universities. To improve the students' practical ability, innovation and teamwork ability the new experimental arrangement is proposed. It changes the ERP course from "teaching" to "learning" [1]. Existing ERP systems has neglected the higher education sector worldwide, even though most universities are in the process of implementing or have implemented an ERP system [7]. One of the most cited Critical Success Factors (CSFs) in ERP implementation projects is User involvement and participation [9]. Considering the status and characteristics of printing enterprise, one can present the demand analysis and builds a framework for ERP system in modern printing enterprises [3].

III. OBJECTIVES OF ERP

- It provides interactive and flexible interface which is easily accessible by No. of users of Educational Institutes
- It handles large volume of transaction which is performed by management staff of educational institute thus increasing performance and efficiency of college management
- It is designed in such a way that subsequent way of updating and modification has less cost effect
- It is more secure as only authorized user is allowed to access respective information
- Time required handling & access information is less.

This system is developed using ASP.Net platform, C# language, SQL server Database in the integrated environment of Microsoft .net framework which provides clear separation between presentation logic, business logic and persistent logic. This paper mainly focuses on entities such as managing student admissions, accounts, college library, staff, parents, examination section, and placement section and college events as required by educational institutes.

IV. SYSTEM DESIGN

It implies systematic approach to the design of system. System design consists of logical designing and physical designing. Logical designing deals with graphical representation of data flow, defining the modules and their relationship and communication with each other and design process of data base. Physical design follows logical design, actual software implementation and working system.

V. DATA FLOW DIAGRAM

Data flow diagram represents relationship among various components of the system. It reveals flow of data through our system. Data flow diagram is a modelling tool which shows interaction between systems, different modules and entities of the system. The process is one of the components of Data flow diagram which transforms the given input to desired result. Movement of data through different processes of the system is as shown in the figure 1 and figure 2.



Fig.1: Level 0 DFD

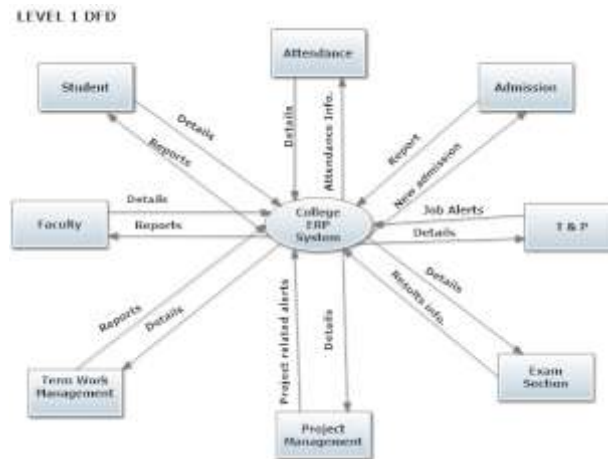


Fig. 2: Level 1 DFD

This Data flow diagram represents information for students, admission, staff, accounts, library, parents, exam section, placement information and other related data of college which is managed by college administration.

VI. STUDENT

Our ERP system is quite convenient and easy to use for a student .A student has to first fill form which checks eligibility of student for taking admission in the college. When student is eligible for admission he/she can fill online admission form wherein they are required to provide their personal details, qualification details and to attach necessary documents. When admission of student is confirmed, student will be provided with student id and password. After successful login student can get access to the information such as view college notification , attendance , their course details, exam details, view placements section and library details. Students will also be able to update and modify their profile.

VII. STAFF

7.1Academic Staff User

Our system provides user friendly interface for academic staff like lecturers and senior lecturers. Our system will assign staff id and password for every staff member. Upon verification of id and password they can log into the system. After successful login, they can provide access to the option such as staff profile, enrolment option which allows staff members to enrol student for any unit, student list option which provides access to list of student, performance option which maintains records for student performance. Staff can make use of student id

to view information regarding individual student like attendance, internal marks, class test result, final exam result and student overall performance.

7.2 Administration Staff User

Administration staff includes H.O.D, Academic service staff and college principle. This administrative staff user can make access to the profile, student details and application option which allow viewing new application and approving or rejecting these applications.

VIII. ADMISSION

Our ERP system provides user friendly interface for filling admission forms online. Thus, reducing time and efforts that was required in paper work. When student is eligible for admission, student can visit options such as rules and regulations for admission, online enquire online admission form, fee structure for particular stream and other related information for taking admission.

IX. EXAM SECTION

Exam section handles all aspects related to the examination. It can track the requirements such as managing exam schedule, managing internal and external marks of students, keeping track of all class tests and updating final result of candidates accordingly. Exam section can also full fill the requirements of allocating class room for student and maintaining supervision list for faculty.

X. PLACEMENT SECTION

Our system provides easy to use interface for managing placement related information such as schedule for interviews, eligibility criteria for respective industry and maintaining records of student who have been placed in a particular company. Placement section is also responsible for keeping a close track for placement records for future reference.

XI. PARENT SECTION

Our system provides user friendly interface for parents to make effective communication with college which increases awareness about college activities among them. Our system also provides an interface which delivers all information such as student schedule, student attendance, report card, college events and personal messages to the parents.

XII. ACCOUNTS SECTION

Accounts section is required for maintaining information related to accounts. Our system provides efficient and easy to use environment for performing actions such as fee receipt generation, managing pending fees of student and various penalties.

XIII. LIBRARY SECTION

Our library system also provides platform for maintaining library information which includes managing book records, updating book details, displaying or updating student data and to make order for new book stocks.

XIV. TECHNOLOGIES USED IN ERP SYSTEM

1. Microsoft .Net:

We have designed our system with Microsoft .Net web technology. Microsoft .Net platform is key framework for application deployment. It is a powerful framework which provides easy to use platform to develop web applications.

2. Html and CSS technologies:

HTML is Hyper Text Markup Language used for designing web pages .We have used HTML for designing our system and making it more effective and attractive we have used CSS . CSS is Cascaded Style Sheet which is helpful for formatting layouts of web pages .CSS is a key tool in web designing which helps in improving presentation logic of our system. CSS is a technology of HTML which is used to style web pages. The basic purpose of using CSS is to add different styling for web page element thus making our system more attractive and user friendly. CSS contains various styles schemas and results which we can apply on our web page elements accordingly to our requirements.

3. JavaScript:

JavaScript is lightweight and most popular scripting language which can be embedded into our HTML code. The main purpose behind using JavaScript is to add dynamic functionality to web pages and to add client side scripting .In our system we are using JavaScript for making our system more interactive.

4. SQL:

Structure Query Language which is used for handling data stored in the database. In our system we have used SQL queries for performing operations over the database such as inserting records into database, retrieving data from database, updating records and delete records from database.

XV. DATA GATHERING

To develop the ERP system surveys were conducted in the administration office & various other sections. Questionnaires' is also developed to understand current manual system for keeping & retrieving student records, surveys, observation & printing sample forms, documents & reports were also important sources of data for developing our system.

XVI. KEY PROPERTIES OF ERP

1. Accessibility:

This web application is accessible to management staff for official work. Here access will be for student data, academic records of student, fee structure of student and performance of student. This data will be useful for proper profiling of student and easy management. This system will not be accessible unauthorized users.

2. Performance:

System allows basic data input by students reducing official workload. Data will be stored on server making process faster. The system will run normally even if No. of users keep increasing as data is stored on college server.

3. Flexibility:

The system is very flexible as it is centrally managed. This system can be updated and modified according to the requirements in cost efficient manner.

4. Security & Maintenance:

This System has low maintenance since all data will be stored on server centrally. The server will be secured by high security walls. Malware detection, virus detection and scanning for any internal generated threats can be carried on server with the help of respective software's.

XVII. CONCLUSION

The fundamental problem in managing and maintaining the work by the administrator is hence overcome. Prior to this it was a bit cumbersome for maintaining the time table and also keeping track of the daily schedule. But by developing this web-based application the administrator can enjoy the task, doing it ease and also by saving the valuable time. The amount of time consumption is reduced and also the manual calculations are omitted, the reports can be obtained regularly and also whenever on demand by the user. The effective utilization of the work, by proper sharing it and by providing the accurate results. The storage facility will ease the job of the operator. Thus the system developed will be helpful to the administrator by easing his/her task.

REFERENCES

- [1]Xia Hu, Min Zhou,"The Three-dimensional Teaching Mode of ERP Course in Colleges and Universities", IEEE-2011
- [2]Chongjun Fan, Peng Zhang, Qin Liu, Jianzheng Yang," Research on ERP Teaching Model Reform for Application-oriented Talents Education" International Education Studies Vol. 4, No. 2; May 2011.
- [3]Wenjie Yang, Haoxue Liu, Jie Shi," The Design of Printing Enterprise Resources Planning (ERP) Software" IEEE-2010.

- [4]Pranab Garg, Dr.Himanshu Aggarwal “Comparative Analysis Of Erp Institute Vs Non Erp Institute; Teacher Perspective, IJMBS-2011.
- [5]Sun, A., A. Yazdani and Overend, J (2005). "Achievement assessment for enterprise resource planning (ERP) system implementations based on critical success factors." Int. J. Production Economics 98: 189-203.
- [6] D. Habhouba, S. Cherkaoui, and A. Desrochers” Decision-Making Assistance in Engineering-Change Management Process”IEEE-2010, 344-349.
- [7] Nielsen, J. (2002). Critical success factors for implementing an ERP system in a university environment: A case study from the Australian International Journal of Human and Social Sciences 5:6 2010 398, HES. Faculty of Engineering and Information Technology. Brisbane,Griffith University. Bachelor: 189.
- [8]Ahed Abugabah, Louis Sanzogni “Enterprise Resource Planning (ERP) System in Higher Education: A literature Review and Implications” International Journal of Human and Social Sciences 5:6 2010, 395-399.

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