



Design and Implementation of Data Management System for a College

¹Rebwar Khalid Hamad Mala, ²Ibrahim Taner Okumus

¹MSc Student, Graduate School of Science and Technology, Kahramanmaraş Sütçü İmam University,
Kahramanmaraş, Turkey

²Ph.D., Computer Engineering, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

Abstract- Data management system provides a simple of use, user friendly interface, managing records of instructors, staffs, students, courses, grades, grades reports, results, etc. Instructors and administrate of departments account can add, edit, update their information. Students can register courses and don't need to go through notice boards to view their results; they can easily view all their results from their accounts.

In this study we provide design and implementation of a data management system designed specifically for use in a college environment. This system is tailored for the needs of a college. Developed system provides functionalities that are currently unautomated. With the designed system, processes are all automatized. This system increases the efficiency and speed of the processes and provides archiving features as well as data security.

Keywords- Computerized Management, Data Management System, Database Management System, Relational Database Management System

I. INTRODUCTION

In this paper, a data management system can be used to manage the data of all type of educational institutes. It is providing to maintain the records of instructors, students, departments, units, courses and grades. It is a system that converting manually working to computerized system. It is easily managing the information of university modules, speed up and accurate of operation. This system is useful and suitable for all universities, colleges, departments and other educational institutions. It is handle the colleges and departments management troublesome. The main and important objective of this system is use to save time during maintaining the records of college management. It has the following objectives; simple, easy operation, save time, save money, can access data in anywhere, anytime and a user friendly interface feature of this system is "title" information for each item. In this system all modules can log in themselves account using their identification number along with their password. After successful log in, the next page will appear, it is allows the user to manage his/her personal information on this system according to permit level. Instructors can enter grades at the interval time selected to perform this process, course materials, research interests, CV, student supervision and manage portal information. Instructor portal information and image will be visible on the corresponding account for that department member on the system. Students can register courses at the period of limitation time; they can view their results from their account. Students can view registered courses, terms courses and grade reports. Scientific unit can maintain records of department information, unit information, instructor information, staff information, dean and assistant dean of institute, head and assistant head of department information, responsible of units, course information, period of add courses and grades, etc. Registration unit can maintain and prepare records of certification, confirmation document, confirmation document with grade and grade report. This system is designed for Erbil Polytechnic University / Koya Technical Institute; but with minor changes, despite that it can be used for any department of any universities or educational institutions.

II. DATA MANAGEMENT SYSTEM FOR A COLLEGE

A database management system (DBMS) is a collection of programs that enables us to store, modify, and extract information from a database. There are different types of database management systems, ranging from small systems that run on personal computers to huge systems that run on mainframes. It is a software tool that makes it possible to organize data in a database [1].

This system has been designed and implemented to provide all modules of universities, colleges and other educational institutions. The main and significant principle behind the necessity of the Data Management System is the easy supervision of the institute. This project consists of two main parts; Front-End and Back-End. To make the dynamic software work effectively, PHP has been used as the Development Platform and MySQL as the Database Management Environment. It is online web-based management software. In the classic working system, if an operator or a manager wants necessary information, he checks the information about a student, instructor, course etc. It is difficult to prepare the

manual work to store the information about the all students, instructors as well as all the staffs. Students don't need to go through notice boards to view their results; they can easily view all their results from their accounts. So my project helps to store those types of information and solve above mentioned problems.

III. MOTIVATION

In the modern world of technology, computers are affecting our lives in more ways than we probably are aware of. COMPUTERISED MANAGEMENT, maintaining information of educational institutes, Colleges, other the list is endless [2].

Nowadays at many universities, colleges and educational institutes working have been done manually with classic form by using ink and paper. This kind of working in the scientific central is hurdle to advance. It needs too much time and delays to maintain and performs of all the modules, it needs more employers and need biggest budgets. And above all it isn't an accurate of operation.

Koya Technical Institute has a data management system. It is a small desktop application and doesn't support online environment. It is used to manage student's grades and output results of the exams for each student in any department and any stage. This system is especially managing student's grades, so students can not register courses and they need to go through departments to view their results. It doesn't support the maintaining records of the department's information, unit's information, staffs information, student's information, courses information, etc. It is unconformable for the universities, institutes and other educational institutions such as scientific central in the Century.

The desire behind this system is to enable the department members update and edit their information on the departmental account according to the permit level. They can insert and update their information such as departments, units, instructors, staffs, curriculum, courses, inserting grades, upcoming events, exam schedules, etc.

IV. OBJECTIVES

The system DATA MANAGEMENT SYSTEM can be used to manage the data of all type of educational institutes. The main and important objective of this system is used to save time during maintaining the records of college management, and another advantage of this project is to keep the records of instructors, students, departments, units, courses and grades safe. To sum up it has the following advantage; simple and easy operations, save time, save money, can access data in anywhere and anytime and a user friendly feature this system by using "title" information for each item.

V. SCOPE

This system is useful and suitable for all universities, colleges, departments and other educational institutions. It solves all the troublesome of the colleges and departments. It is provided for maintaining instructor information, student information, department information, unit information, courses and grades, etc.

VI. DEFINITION OF PROBLEM

Today all the procedure for student's admission is done manually by ink and paper, which is very slow and consuming much efforts and time. Since the numbers of students is growing, and management has to handle records of all the students, it is facing a little bit problems in maintaining the records of students. It is required to Design of a Computerized Data Management System, to speed up and make it easy to use system [3].

VII. PROPOSED SYSTEM

In our proposed data management system, we have permission for adding and updating details of the modules. It is an accurate operation, fastens the functions, easy to use, and also reduces staff numbers which is directly help universities to reduce and save yearly budget.

VIII. TECHNOLOGIES

This section furnishes some introductory information on the main technologies used in the design and implementation of this project, technologies such as HTML, PHP, MYSQL, JAVASCRIPT, JQuery and Ajax.

IX. OVERVIEW APPLICATION

A. High Level View

In this system visitors can view information such as department information, course information, course materials, portal instructors, events, news and announcements. Administrate of departments can view and manage information such as department information, exam schedule, department activity, student activity, news, announcement, etc. Instructors can view and manage information; they can maintain records of portal, researches, student supervisions, CV, course materials, grades, etc. Administrate of units can view and manage information according to permit level; scientific unit is used to maintain records of departments information, units information, dean information, assistant dean information, head departments information, assistant head departments information, instructors information, staffs information, course information, etc. Registration unit maintain records of certification, backing documents, backing document with grades, grade reports, etc. Students can register courses, access their results and send message to instructors and departments. These modules are accurately explained next. Figure 1 gives a high level overview of this project.

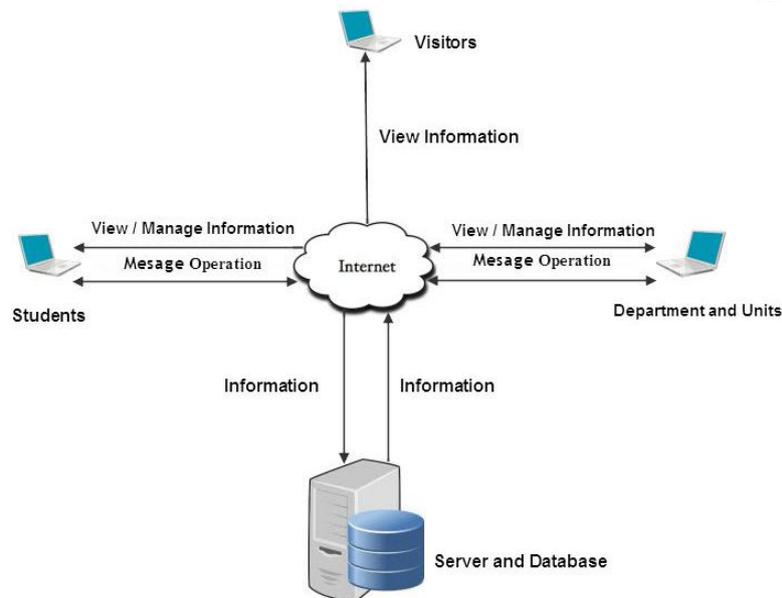


Fig. 1 High level view of the system [4]

B. Log in

Login module is used to check whether the user is an authorized person to use the system or not. For this the user should give the correct user name and password.

If only user enters the correct username and password, he will be allowed to proceed further with the software. The username and password will be required to subsequent log in. In case the user forgets his password, there is an option “forgot your password” on the log in page. With this one the user can have the password emailed to him at this email address. The different types of users are administrator, instructor and student. After this page would be disappeared the Master page will appear.

1) Scientific Unit Module

In the scientific unit, the administrator can log in themselves by using their instructor identification number along with their password. After successful log in, the next page will appear.

This module is used to maintain department’s information such as insert new department and update department information. It is also used to maintain unit’s information and unit’s functions. It is used to insert instructor’s information, staff’s information for any department and any unit. It is used to add, edit and update courses information for each department. It is used to maintain the dean records such as inserting information about dean of institute and assistant dean of institute. Insert information about head and assistant head of departments. Add responsible of units. Add permission for instructor to perform home page of departments and units. It is used to permit instructor teaching courses. It is used to insert main and important functions of each unit. It is used to maintain the period records such as period of registration of courses and period of add grades. It is perform processes to calculate number of courses, number of successes and number of fails for each student and change status of each student. Administrator of scientific unit can operate message options such as send message, view inbox and outbox messages. Administrator of scientific unit can change his password. Administrator of scientific unit is allowed to access advanced query options to view above modules data and generate reports based on different criteria.

2) Registration Unit Module

In the registration unit, the administrator can log in themselves by using their instructor identification number along with their password. After successful log in, the next page will appear.

This Registration module is used to maintain the student records such as register new student and prepare certification. It is used to prepare certification, backing document and backing doc. with grades for students. It is used to add graduate date. Generate reports about number of students and calculate number of students according to gender. Administrator of registration unit can operate message options such as send message, view inbox and outbox messages. Administrator of registration unit can change his password. Administrator of registration unit is allowed to access advanced query options to view above modules data and generate reports based on different criteria.

3) Instructor Module

In the Instructor module the instructors can log in themselves by using their instructor identification number along with their password. After successful logging in, the next page will appear. It allows the user to manage his personal information on this account. Here he can enter his research interests, profile information and upload his image, etc. This information and image will be visible on the corresponding account for that faculty member on the system.

This information will appear to the visitors of the system on the account of the faculty. Instructors are allowed to view and manage information. The instructor can view all records of any students they wish. The registered instructors can view records and as well as can changes to the records. The instructor can view personal information, student supervisions, researches, courses and uploaded materials from instructor portal after uploaded it. The instructor can add

student supervision such as diploma, bachelors, master, and doctorate levels. The Instructor can add researches, CV and materials associated with those teaching courses for current academic year. The Instructor can view those teaching courses for current academic year and years ago and view all students subscribed courses. The Instructor can view and add grades for all students registered courses according to period of limitation time, before or after selected period instructors can not enter, edit and update their grades, in this case; instructor viewer only. First and second exam allow entering grades from (0 to 25); first and second round exam allow entering grades from (0 to 50). The instructor can operate message options such as send message, view inbox and outbox messages. The Instructor can change his password. The Instructor is allowed to access advanced query options to view courses, student grades and generate reports based on different criteria.

4) Student Module

In the student module the students can log in themselves using their Student identification number along with their password. After logging student processes account will appear. Students can view records of like; personal information, course registration, term courses, all courses, exam results and reports.

Students can register courses at the beginning of study year; registered courses according to period of limitation time, before or after selected period student can not perform it. The Students can view personal information, term course for current academic year and all registered courses. The Students can view exam result for current academic year and generate report about all grades of classes. The registered students can only view their records; they are not allowed to change the records. The student can operate message options such as send message, view inbox and outbox messages. The student can change his password. The student is allowed to access advanced query options to view courses, grades and generate reports based on different criteria.

5) Administration of department account

In the administration module administrator can log in by using their administration's identification number along with their password. After successful log in, the next page will appear. It allows administrator to manage many type of information on this system. Here he can enter department information, exam schedule, activities, student activities, news and announcement and uploading image for all above sections, etc. This information and image will be visible on the corresponding account for that department member on the system.

X. END-USER (VISITOR) MODULE

Visitor can view department information, courses, subject details, events, fresh news and download course materials.

XI. CONCLUSION AND FUTURE EXTENSIONS

It was a wonderful and learning experience for me while working on this project. This project took me through the various phases of project development and gave me real insight into the world of software engineering. The joy of working and the thrill involved while tackling the various problems and challenges gave me a feel of developers industry. It was due to this project I came to know how professional software's are designed. I enjoyed each and every bit of work which I had put into this project [5].

Data management system is a simple of use, very useful and suitable software for university departments to manage its online information. Moreover, it is wonderful software for storing large quantities of data efficiently. Suitably, accurately and speed up in managing information. User interfaces are user friendly and attractive; it takes very less time for the operator who used to get with the system. It is easy to use of the key feature that makes a desirable, suitable and benefit software for a department. It saves time, saves money, can access data in anytime and anywhere.

This system has many advantages to manage records of departments, units, instructors, students, courses, exam schedule time table, exam result, grade reports, etc. This system was support for uploading all files and documents by the faculty members.

Firstly and initially useful of this system was manually working converted to computerized system. Instructors were interactive with students to insert grades; add CV to themselves profiles, subjects and materials. Instructors can up to date their information on the own accounts. Administrate department home page can add, edit and update the information related to the departments and units and uploading image for sections. In addition, students can register courses at the period of limitation time; they can easily access all their results from their accounts. Students can view their registered courses, get grade reports, view and download course materials form their departments account. Moreover, faculty members, instructors, staffs and students get breaking news, view upcoming events and announcements.

One initially desired feature of this system was support for requesting transcription certification, backing document and backing document with grade by the students. Also, it was support for requesting temporarily licensing and daily licensing by the instructors.

Another desired, support for features like maintaining records of absences and attendance, the faculty can send emails to students registered in a class and interact with students on a discussion board for each class, student can fill feedback forms to all course subscribe it, ... etc.

This system is designed especially for the Koya Technical Institute at the department of Erbil Polytechnic University; but with minor changes, it can be used for any department of any university or educational institutions.

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