

Development of Information System for a University

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Abstract- Information systems plays a major role in contemporary university. In a university, the management of student information is tedious and boring and it is needed to be computerized. The achievements in the education and the science areas depend on the computerization of the activities of university. The student information system of a university stores and tracks all student data which are needed by the faculty and staff to manage the operations of the university. Information such as grades, attendance records, admission information, and financial aid are tracked through these platforms. This paper presents the development of student information system for a university using ADO.Net technology and Microsoft SQL to help faculty and staff to manage the university operations.

Index Terms- Information System, University Information System, University operations, ADO .net technology,

I. INTRODUCTION

Information that an institution collects or gathers would help making decisions that would benefit their organization in the era of computer technologies. Because of this, database systems are now used by many organizations that can help in storing data. It is a reliable data storage and retrieval. With the help of computers, data management and analysis is faster and easier than a manually managed data. At present, the number of university students are increasing, the management of student information is crucial. The current paper based work is tedious and not efficient.

An information system is a working system that is processes and activities of information system is for capturing, transmitting, and storing, retrieving, manipulating, and displaying information. Thus, information systems provide informational products for customers of internal and external of organization using information, technology and other resources [1].

Student information system (SIS) is a one type of management information system which can help in education establishments for managing student data. Student information systems can provide services and capabilities for registering students in specific courses; keeping results of tests and scores of assessments, keeping student grades and transcripts, building student schedules; tracking student attendance; managing many other student-related data needs in a university. For the development of Higher Education Institutions, Student Information System plays an important role for the academic decision making purpose and other academic tasks. Because of the development of Science and Technology, information is essential in our daily life.

This study aims to develop and maintain a functional, reliable, usable, efficient, maintainable and secure student information system. This system will be able to help the Register and staffs of student affair department of the University of Computer Studies, Myitkyina to reduce the tasks mainly on the delivery of enrolment procedures and the keeping of student records and to eliminate the problems of the current manual system.

II. RELATED WORK

A new type of information management system is presented in [2]. That system was implemented for identification and management of student based on fingerprint identification. The two parts in their work are terminal and host. The fingerprint identification module is composed in terminal part with the micro controller. As the host computer, personal computers or large servers can be used according to the number of users. SQL server was used for storing and managing of student information. The terminal fingerprint sensor uses optical fingerprint recognition module, while the microcontroller uses STM32F4 with 192 KB of SRAM. The fingerprint identification sensor collects the finger print information and the microprocessor processes and encrypts the fingerprint information before transmitting it to the server.

Student Information and Score Management System (SISMS) presents in [3]. It can be used for maintaining students' records in universities and educational institutions or colleges.

Role of Information Systems in a University Setup is presented in [4]. In modern knowledge societies, knowledge is power. Therefore, information plays the important role in any organization and management of information is one of the major activities amongst various activities in today's world.

The work in [5] presented a Student Information System for Kalinga State University. Their study was intended for the improvement of the efficiency of the existing Student Information System of Kalinga State University Rizal campus. The system in [5] tried to meet the five requirements; reusability, maintainability, security, usefulness and functionality and evaluation on the system appeal of a quality software only to a moderate extent.

III. PROPOSED UNIVERSITY INFORMATION SYSTEM

Among the resources of a university, Information Systems (IS) have become a basic one and plays an important role for all the stakeholders. That is because of the need for collecting of data, storing of data processing and transmission of information, information systems are important in any organization. Here, universities need the information systems which are able for storing, updating and deleting of student data through a simple interface.

In the existing system, all actions are written down. The students have to write down their personal information in the registration from every time they enroll, and pass the records to register and accounting division. The purpose of this paper is to present the development of student information system for computerized record keeping of student information and future for online student registration system.

The system presented in this paper is in order to replace the current manually and paper based student registration and record keeping process in Student Affairs Department of University of Computer Studies, Myitkyina, shown in Figure 1.

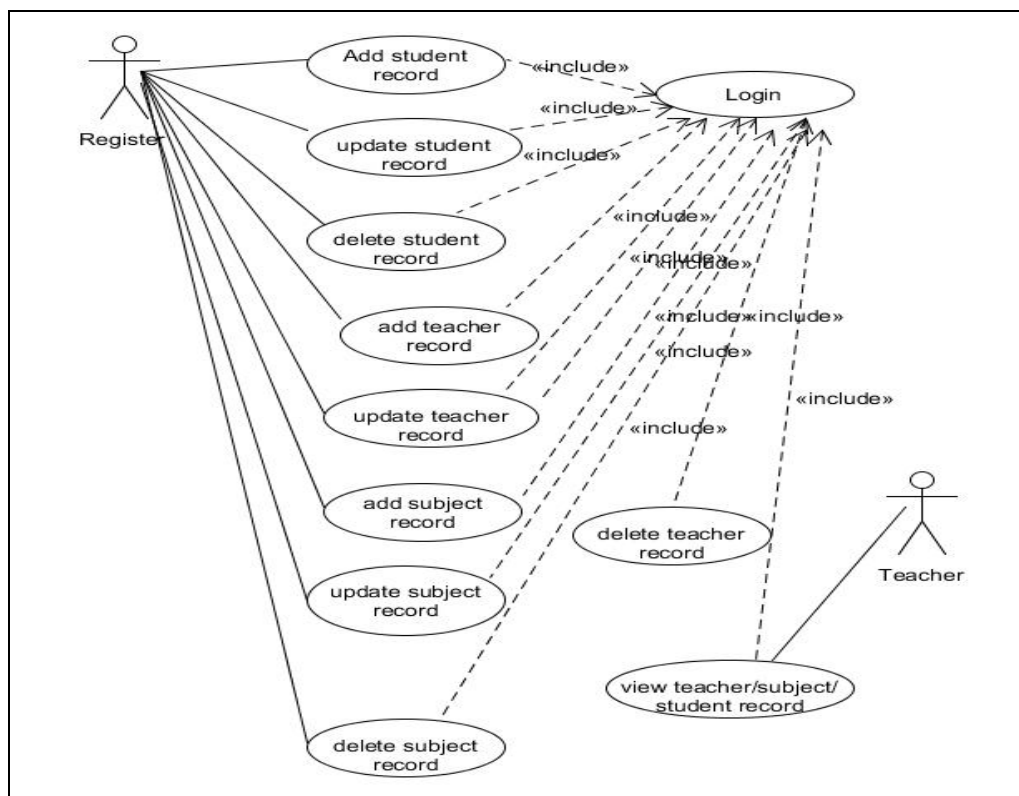


Figure 1. Processes of University Information System

Figure 1 shows the processes in a university information system. The Register and authenticated staff from student affair department can add, update and delete the student, teacher and subject information. These information are stored in university database as shown in Figure 2.

The database in Figure 2 is designed for storing and retrieving information of students who are registered for specific course, which teacher teaches for which course and time table for each major and year of the University.

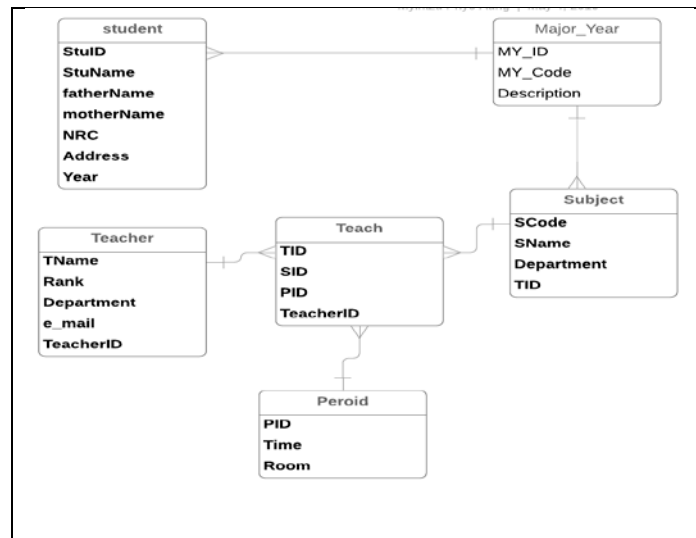


Figure 1. ER diagram for University Information System

IV. TECHNOLOGY USED

With the development of Science and technology, the information system is essential in our daily life. It is needed to replace the existing manual work with the computerized system for student registration. The system presented in this paper used the RDBMS and ADO .NET to implement the information system for students of University of Computer Studies, Myitkyina.

ADO.NET

ADO .NET is a very important feature of .NET framework which is used to work with data that are, stored in the database, such as Microsoft SQL files. ADO DOT NET is a set of classes that expose data access services for .NET Framework. ADO .NET can be represented as a set of computer software components that are mainly used to access data and the data services which are based on the disconnected Datasets and the XML. It is also a part of the base class library which includes the Microsoft .NET Framework. ADO .NET contains a number of classed that provides various methods and attributes to manage the communication between the applications and the data sources. ADO .NET provides a set of features, such as connection and commands that can be used to develop the highly efficient data services and many other important services in .NET applications [6].

RDBMS

RDBMS stands for the Relational Database Management System which is the basis of SQL and all the modern database system such as the MS SQL server, IBMDB2, Oracle, MySQL and Microsoft Access. Most RDBMS use the SQL language to access the database [7].

SQL Statements

SQL is mainly used to communicate with the database. It is the standard language for relational database management systems. SQL statements are mainly used to perform the task such update the data on a database, or to retrieve the data from a database [8].

V. IMPLEMENTATION OF UNIVERSITY INFORMATION SYSTEM

A. LoginPage

In the Login page, the user needs to fill the security information (such as User Name and Password) to access the system. If the User Name and Password is correct, the user can enter to the Selection Page.



Figure 3. Login Page

B. Selection Page

From the Selection Page, the user can choose to go to Insert Page, Update Page, Delete Page and Show Page for insertion, updating, deleting of student information.

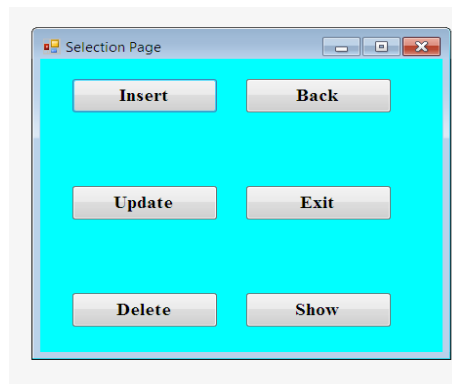


Figure 4. Selection Page

C. Insert page

Student Information such as student name, roll number, address, year major etc. can be added by using Insert Page.

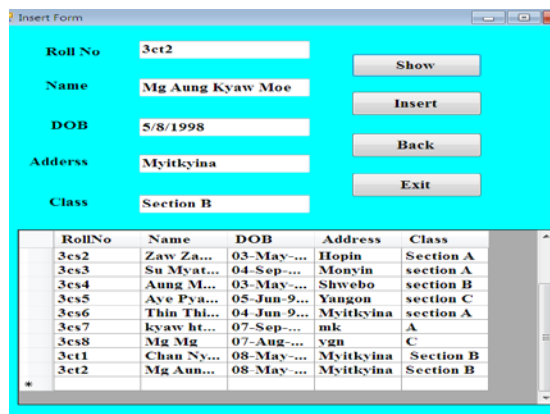


Figure 5. Insert Page

D. Update Page

In Update Form student information such as Address can be updated by using student's roll number.

RollNo	Name	DOB	Address	Class
3cs2	Zaw Za...	03-May-...	Hopin	Section A
3cs3	Su Myat...	04-Sep-...	Monyin	section A
3cs4	Aung M...	03-May-...	Shwebo	section B
3cs5	Aye Pya...	05-Jun-9...	Yangon	section C
3cs6	Thin Thi...	04-Jun-9...	Myitkyina	section A
3cs7	kyaw ht...	07-Sep-...	mk	A
3cs8	Mg Mg	07-Aug-...	ygn	C
3ct1	Chan Ny...	08-May-...	Myitkyina	Section B
3ct2	Mg Aun...	08-May-...	Myitkyina	Section B

Figure 6. Update Page

E. Show Details Page

In the **Show Details Form**, detail information of a student can be seen by clicking the detail button if the roll number of the student is known.

RollNo	Name	DOB	Address	Class
3cs13	phoo ng...	06-May-...	mdy	B
3cs14	Pearl	08-Jul-9...	Monywa	B
3cs2	Zaw Za...	03-May-...	Hopin	Section A
3cs3	Su Myat...	04-Sep-...	Monyin	section A
3cs4	Aung M...	03-May-...	Shwebo	section B
3cs5	Aye Pya...	05-Jun-9...	Yangon	section C
3cs6	Thin Thi...	04-Jun-9...	Myitkyina	section A
3cs7	kyaw ht...	07-Sep-...	mk	A
3cs8	Mg Mg	07-Aug-...	ygn	C
3ct1	Chan Ny...	08-May-...	Myitkyina	Section B

Figure 7. Show Detail Page

VI. CONCLUSION

Because of the development of modern Information and Communication Technologies (ICT), there is a need for the academic world to enter the era of information society. There are many systems in universities such as academic management system, examination system, online learning systems, student information system, faculty information system etc. The common idea of these all systems is for capturing the relevant data and representing and visualizing them in accordance with the requirement of the users. In this paper, student information system have been developed to maintain the information and other content of a digitized Information using ADO .NET technology and Microsoft SQL. This system is mainly intended to be used by the staffs from student affair department and faculties of university. Currently this system is intended to be used by authenticated staffs of student affair department for helping their academic activities. Later, the system can be extended to online student registration and management system.

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