Online course registration and management system flashcard

Keywords: online registration it, management system development

Currently the Microsoft IT Academy in Multimedia University Melaka using the website that hosted in MMU server to provide information regarding the course offered as well as the registration method to enroll on the specific course. As the course registration is still done manually, below is the summary of the problem on the manual method:

User :

It consumes time as user is not enabling to book the seat if they have not submitted the form manually together with official receipt to the instructor.

The user can pay the registration trough many ways, such as Online Banking, but they still have to submit the official receipt taken from Multimedia University finance division.

Administrator/Instructor :

Administrators have to wait until the number of registrant fulfills the minimum requirement of the course to open class.

All registration related must be done manually, as no online system available yet.

Financial report must be also done manually in order to keep track of the financial progress of the courses.

Project Objective

The project objective will be focused on developing an online course registration to ensure the effectiveness of the flow of registration. Moreover the system will offer a complete management system that integrated with the online course registration to help the stakeholder for maintaining the flow process of the course.

The registration process can be done online without the need of paperwork anymore. It is also help the student to get more information about the course process while they enrolled.

The administrator will get easier way to determine the seat of the courses, keep track of the registration module, and generate report for the year to help them determine the development of the courses. The cores of objectives of the project are followings:

To study existing course registration system in Microsoft IT academy of Multimedia University. Analyzing current course registration system, by interviewing the stakeholder of the system.

To propose an online course registration and management system.

To identify the user requirement for online course registration and management system.

To develop an online course registration and management system.

To evaluate the online course registration system that been develop.

Project Scope

The studies will develop an Online Course Registration, specifically for the Microsoft IT Academy in Multimedia University. With this system, it will affect the stakeholder of the Microsoft IT Academy Multimedia University Melaka Campus such as:

Administrator /Instructor

The Administrator for the system will be divided to several privileges on how they can use the system. Administrator for example, have all the privileges such as adding instructor, adding courses, update information, adding downloadable material, registration module, etc., but Instructor only have several privileges on what they can do and not do in the Online course registration and management system.

Student/User

Student will get a more accessible way in order to register and booked the seat for the courses. They also can get updates from administrator keep track on the progress of the course.

Significance of Project

This final year project for intelligence online course registration will not only provide basic feature to the user as well as administrator, but will be also completed with these features:

Online Chat Helpdesk Support System

The Helpdesk Support System will allow the user to interact with the administrator in case if they have certain question to be asked regarding the course or the registration flow.

Security

Security of the website is one of the main concerns to be improved as the registration is moving from traditional to online based. The reason is because user will send their confidential data to the system. Some user might use the same login ID or password, and without proper security, the data might be accessed by third party, or the user session is hijacked while sending the data. The security improvement will also provide log to the administrator in case there are some abnormality in the system after some user log in. As the security improved, we are giving the user a better understanding why they should trust our system.

Limitation of Project

In this project there are 2 objectives to achieve which are developing online course registration and management system for the Microsoft IT Academy Multimedia University Melaka. This project will focused on how to make the registration flow as simple as possible and also automated in the flow process.

However there are limitations which is not be covered in this project. Even though the registration for the user will be done online, some flow of the process will be still done manually, such as submitting the official receipt of MMU to instructor. This is because of Multimedia University policy that not

allows administrator to access the student financial report. Yet the system itself will allow user to upload the proof of payment trough online registration.

Structure of Report

This report consists of 5 main chapters. The first chapter, Chapter 1 which is Introduction presents overview of the project, the problem statement of the study state the problem occur on the current system, the project scope, objectives of the study that explain about the project main goals that need to be achieved, and structure of the report as well as the limitations of the project.

Chapter 2 which is Literature Review state explains about materials used to study for the proposed system later, literature review also briefly explain some previously system that use same the technology in registration system.

Chapter 3 is Methodology; and this chapter explains about the methods and tools that will be used to develop the system. It also gives some explanations why the methods and tools are chosen in the project.

Chapter 4 which is the Proposed Solution and Implementation Plan or Design, this chapter presents the plans on how the system developed as well as the design of the system. This chapter mainly consists of diagrams to describe the design of the proposed system and some little explanation about the proposed system.

Chapter 5 is conclusion; this chapter will summarize the conclusion of the objective stated.

Chapter Summary

In this Final year project the main objective is to propose and develop an online registration and management system that will facilitate the user as well as the administrator in order to keep the flow of registration more compact and efficient. This chapter explains the scope of the project which will affect the Microsoft IT Academy in Multimedia University Melaka stakeholder. Moreover in this chapter also describes about the problem that the current system where most of the flows still done manually.

Chapter 2Literature Review

Online course registration and management system has become a necessity in order to create simple and accessible way to support today system. The internet has dramatically changed the role of Internet today (Cassidy 2002: 1). Internet is the tool or vehicle for many applications, as well as to maintain registration for government, companies, and many events. This is happen as result of the simplicity of internet access in many part of the world.

2. 1. Online Course Registration

Johnson and Manning (2010) stated that the two biggest differences between registering online and mailing in your paperwork are time and technology. It can take time when users have to fill in the form, and then submit it in some other places. Instead of taking time, technology has helped us to make the registration procedure into the next level. You can find more information

about the courses you want to take and in the same time fill up the form, pay the fees, etc. The staff that receives registration information most probably will process the information in same system, so by using online course registration and management system, we can save time.

2. 1. 1. Online Course Registration and Management System

An Online course registration and Management System is systems that maintained the registration flow for the user and provide extensive capability for the administrator to maintain the content, report, and ability to add, update, or delete the content of a system. Currently there are many applications that have the ability to manage registration online. Some of them are very simple, and more complicated that use current technology. Almost all web based programming language support the capability to make online registration, such as PHP or . NET provide many option to build intelligence course registration and management system. A good system must be able to provide sufficient information and services needed by user as well as delivering extensive report to the administrator (Anggarwal. 2003: 233).

2. 1. 2. Existing Online Course Registration and Management System

Most of the Online Course Registration and Management System are mostly used in educational institution and professional courses. This is to avoid time consuming of managing numerous users and prevent error from manual method. Based on that, people tend to use Online Course Registration and Management System.

There is some Online Course Registration and management System that researched and improves, such as:

Wylie Course Registration

The C-Registration System will replace the existing mainframe course registration system at Wylie College. The new system will interface with the existing Billing System and Course Catalog Database System as shown in the context diagram below (see Figure 2. 1).

The C-Registration System will consist of a client component and server component as illustrated in Figure 2. 2. The server component resides on the Wylie College UNIX Server. The server component must interface with the Billing and Course Catalog Database Systems on the College DEC VAX Main Frame. This interface is supported by an existing Open SQL Interface.

The client component resides on a personal computer. The College PCs will be setup with the client component installed. Any non-college PCs must download the client software from the UNIX Server via the Internet. Once the client component is installed on the PC, the user may access the C-Registration System from the PC through the College LAN or Internet. A valid ID number and password must be entered in order for access to be granted.

Figure 2. 1 C-registration System Context Diagram

Figure 2. 2 C-Registration system overview

The C-Registration system has many capabilities which will be explained the following table:

Table 2. 1 C-Registration capabilities

Costumer benefit

Supporting features

Up-to-date course information

The system accesses the Course Catalog Database for up-to-date information on all courses offered at Wylie College.

For each course, the Students and Professors may review the course description, Prerequisites, assigned teachers, class locations, and class times.

Up-to-date registration information

All course registrations are immediately logged in the Registration Database to provide up-to-date information on full or cancelled courses.

Easy and timely access to course grades

Students can view their grades in any course simply by providing their user ID and password. Students may access the registration system from any College PC or from their home PC via the internet.

Professors enter all student marks directly into the Registration Database from their PCs.

Access from any College PC

Students may access the registration system from any College PC or from their home PC via the internet. Installation of the client component of the C-Registration System on a PC is an easy to follow process using the internet

Easy and convenient access from your PC at home

Students may access the registration system from any College PC or from their home PC via the internet.

Secure and confidential

A valid user ID and password is required to gain access to the C-Registration System. Student report card information is protected from unauthorized access.

Instant feedback on full or cancelled courses

All course registrations are immediately logged in the Registration Database to provide up-to-date information on full or cancelled courses.

Online Course Registration System for the Faculty of Engineering in University of Peradeniya

In the system developed by the University of Peradeniva, there are some necessity in online registration course that should be included in the system, such as:

Authentications and Authorizations of users;

Administrators should be able to decide time period for the registration (before the start of the semester) and time period for the add/drop period (at the beginning of the semester);

Administrators should be able to enter required data into the system such as courses, students, advisers and examination results;

Advisers are allowed to view filled registration form of each student and accept/ reject the registration;

Students should be able to view current courses and previous results, to register or add/drop new semester courses;

Users should be able to change their passwords and personal information; and In the absence of a relevant adviser, the head of the department should be able to accept the online registration forms.

All users have their own usernames and passwords to access the system and they have the ability to change their passwords. They will be given separate entry levels to access the system. Figure 2. 2 depicts the use-case diagram of the system. Administrators are the staff officer at the Office who is responsible for course registration. They have the authority on deciding time durations, entering required details and finalizing registrations.

Figure 2. 3 use case of the online Registration in University peradeniya

Advisors are all the department heads and lecturers who are assigned as advisers for students. They are capable of viewing courses, student details and results and accepting or rejecting registration forms. Student category

contains everyone who has registered for a degree programme in the faculty. They are allowed to view available courses, their details and results, and to complete their registration forms and add/drop forms.

The system that being used will be detailed explained in the table below:

Table 2. 2 system used in Online Course Registration of university peradinya

Technology

Usage

Dream Weaver

GUI Design

CSS

Additional Features in GUI Design

ASP. net

Programming Design

Ajax

Client Script Development

SQL Server 2000

Database Design

IIS

Web Server to host the system

Crystal Report 9. 0

Generate reports.

As the system works, it has not only reduced the burden of all parties involved in the course registration process, but also improved the process by reducing errors.

Secure Online Application

The real test of a secure Web Application occurs when it comes time for users to log in and access your site (Burnett, Mark. 2004). Login screen is look simple. User just provide the username and password, the system will authenticate it to access the system. Authentication establishes a user's identity. Once this identity is proved valid, the user is authorized (or nor authorized) to access various features of the Web application.

2. 2. 1 User authentication Threats

The primary threats with user authentication are:

Account hijacking This involves taking over the account of a legitimate user, sometimes denying the rightful user access to his or her account.

Man-in-the-middle Intercepting Web traffic in such a way that the attacker is able to read and modify data in transit between two systems.

Phishing A type of man-in-the-middle attack in which the attacker lures a legitimate user to enter a password through a fake e-mail or Web form designed to look like that of a legitimate Web site.

Unauthorized access Gaining access to restricted content or data without the consent of the content owner.

Information leakage Revealing or failing to protect information that an attacker can use to compromise a system.

Privilege escalation Allowing an attacker to gain the access privileges of a higher-level account.

Sniffing Using a network-monitoring utility to intercept passwords or other sensitive information that traverses a network.

Because the login form plays such an important role in authenticating users, it is important to protect the form itself from flaws. A poorly written login form is vulnerable to password sniffing, information leakage, and phishing. Furthermore, the form itself may be vulnerable to flaws such as SQL injection and cross-site scripting.

2. 2. 2. Secure Authentication

In ASP. NET the IIS provides four standard methods for authentication:

Basic authentication

Digest authentication

Integrated Windows authentication

Client certificate mapping

Basic Authentication

Basic authentication works by prompting a Web site visitor for a username and password. This method is widely used because most browsers and Web servers support it. The benefits are:

It works through proxy servers.

It is compatible with nearly every Internet browser.

It allows users to access resources that are not located on the IIS server.

Basic authentication also has some drawbacks:

Information is sent over the network as cleartext. The information is encoded with base64 encoding, but it is sent in an unencrypted format. Any password sent using basic authentication can easily be decoded.

By default, users must have the Log On Locally right to use basic authentication.

Basic authentication is vulnerable to replay attacks.

Because basic authentication does not encrypt user credentials, it is important that traffic always be sent over an encrypted SSL session. A user authenticating with basic authentication must provide a valid username and password. The user account can be a local account or a domain account. By

default, the IIS server will look locally or in Active Directory for the user account. If the user account is in a domain other than the local domain, the user must specify the domain name during logon. The syntax for this process is domain nameusername, where domain name is the name of the user's domain. Basic authentication can also be configured to use user principal names (UPNs) when you use accounts stored in Active Directory.

To prevent exposing user credentials to others on the network, it is essential that you always use SSL with basic authentication. Note that basic authentication causes the browser to send user credentials to every page on the same site or within the same realm, not just the login page. If you don't use SSL on every page, user credentials will be visible on the network. One way to prevent these credentials from being sent on unprotected content is to use a unique realm for protected and unprotected content.

Digest Authentication

Digest authentication has many similarities to basic authentication, but it overcomes some of the problems. Digest authentication does not send usernames or passwords over the network. It is more secure than basic authentication, but it requires more planning to make it work.

Some of the similarities with basic authentication are:

Users must have the Log On Locally right.

Both methods work through firewalls.

Like all authentication methods, digest authentication does have some drawbacks:

Users can only access resources on the IIS server. Their credentials can't be passed to another computer.

The IIS server must be a member of a domain.

All user accounts must store passwords using reversible encryption.

The method works only with Internet Explorer 5. 0 or higher.

Digest authentication is vulnerable to replay attacks, to a limited extent.

Digest authentication is secure due to the way it passes authentication information over the network. Usernames and passwords are never sent. Instead, IIS uses a message digest (or hash) to verify the user's credentials. In order for digest authentication to work, all user accounts must be stored using reversible encryption in Active Directory, which may be a potential risk. After this setting is enabled for a user account, the user's password must be changed to create the plaintext copy.

Digest authentication does provide more security, but for most Web sites, the limitations of this method outweigh the benefits. One interesting peculiarity with IIS is that when you send authentication headers to a client, it will send the basic authentication header before the digest one. Many Internet browsers use the first header they encounter and therefore opt for the weaker basic authentication.

Integrated Windows Authentication

Integrated Windows authentication is also a secure solution because usernames and passwords aren't transmitted across the network. This method is convenient because, if a user is already logged on to the domain and if the user has the correct permissions for the site, the user isn't prompted for his or her username and password. Instead, IIS attempts to use the user's cached credentials for authentication. The cached credentials are hashed and sent to the IIS server for authentication. If the cached credentials do not have the correct permissions, the user is prompted to enter a different username and password.

Depending on the client and server configuration, integrated Windows authentication uses either the Windows NT LAN Manager (NTLM) or Kerberos for authentication. You cannot directly choose which one is used; IIS will automatically choose a method based on the server and client configuration. The Web browser and the IIS server negotiate which one to use through the negotiate authentication header. Both Kerberos and NTLM have their own advantages and disadvantages. Kerberos is faster and more secure than NTLM. Unlike NTLM, which authenticates only the client, Kerberos authenticates both the client and the server. This helps prevent spoofing. Kerberos also allows users to access remote network resources not located on the IIS server. NTLM restricts users to the information located on the IIS server only.

Kerberos is the preferred authentication method for an intranet Web server. However, the following requirements must be met for Kerberos to be used instead of NTLM:

Both the client and server must be running Windows 2000 or later.

The client must be using Internet Explorer 5 or later.

The client and server must be in either the same domain as the IIS server or in a trusted domain.

Integrated Windows authentication has a few limitations:

It works only with Internet Explorer 3. 01 or later.

It does not work through a firewall. The client will use the firewall's IP address in the Integrated Windows hash, which will cause the authentication request to fail.

Client Certificate Mapping

Client certificate mapping is the process of mapping a certificate to a user account. Certificates can be mapped by Active Directory or by IIS. Both of these methods require Secure Sockets Layer (SSL). There are three types of certificate mappings:

One-to-one mapping

Many-to-one mapping

UPN mapping

Certificate mapping is the process of linking a certificate to a specific user account. Normally, if we wanted to give a user authenticated access to the intranet; we would either create a user account or allow the user to log in using his domain account. Creating duplicate accounts is time-consuming, yet if users use their domain accounts, there is the concern that their domain passwords could become compromised.

To provide better security and reduce the administrative workload, we could choose to issue each user a certificate. Certificates can be used to verify a user's integrity. It is actually more efficient to use a certificate than a user account because certificates can be examined without having to connect to a database. It is generally safer to distribute certificates than user accounts. Furthermore, it is much easier to guess or crack someone's password than it is to forge a certificate.

Chapter Summary

This chapter discusses the material research as well as basic understanding of the online course registration and management system. The material provided is to help and understand the project, and how the system can improves the registration and management system.

Chapter 3Methodology3. 1. System Methodology

It is important to understand that an information system has a life cycle, just as living system or a new product has. System analysis and design constitute the key stage of system development life cycle (ISRD Group, 2007). System

Development Life Cycle has several phases which are planning, analysis, design, implementation, and maintenance.

Figure 3. 1 System Development Life Cycle

3. 1. 1. Planning

Planning is the first phase in the System Development Life Cycle, in this phase the necessity of the system has to be identified (Hoffer, et al., 2005). The objective, scope and the main reason to develop the system has been explained in previous chapter.

3. 1. 2. Analysis

The second phase is the analysis phase, which during this phase an analysis on the system requirement is being held (Hoffer, et al., 2005). The output of this phase is a description of the recommended solution by determining the problems and requirements. In this phase information regarding of the project is gathered, the information gathered then can be studied to help the understanding about the project. In this project analysis phase determine what method used to build the system later on. In this phase, we interview the stakeholder of Microsoft IT Academy Multimedia University (see appendix for detail)

In analysis phase, we determine:

Detailed evaluation of current system

Data Collection

User Requirement

3. 1. 2. 1 Current System Evaluation

Figure 3. 2 System flow of the system

Figure 3. 2 show the current system flow of the MSITA. The flow show that some part still done manually, such as filling form and registration (student have to download form from website, pay the course fees to MMU finance, and submit the official receipt to the instructor).

The website that being used now is using ASP. NET as programming language, but there is no online registration capabilities. The website is used for content management system only. All the registrant will be input manually by the instructor.

3. 1. 2. 2. Data Collection

To ensure that we understand the flow of the current system, we need to identify the stakeholder of the system, such as:

Table 3. 1 Stakeholder

No

Stakeholder Name

Stakeholder type

Roles

1

Instructor

Instructor of Courses

Provide Course material, provide place/lab for the course exercises , manage registration for user

2

MMU Finance division

Registration Payment Submission

Receive Payment from Costumer, Issue Official Receipt for registration

3

Student

User/Costumer

Register for the course, submit receipt for registration, participate in course as scheduled, take certification exam

From the stakeholder above, we already identify that the most influence entity are the User and Instructor of the course. We will then identify the problem on the current website.

Function of Microsoft IT Academy Website

As main website for student for :

Check latest/available course offered by MSITA team.

Check schedule for the course

Check registration procedure (Download Registration Form)

Download notes/material for the course (only for registered user)

Technical Detail of Microsoft IT Academy Website

Technology Used : ASP. NET

Other Items considered

Course material is given trough the class

Registration of the course still done manually (student have to download form from website, pay the course fees to MMU finance, and submit the official receipt to the instructor).

The reason why the registration still done manually :

Sometimes there are changes in registration procedure (e. g. minimum requirement for the number of the student to open the courses, some courses is added/removed).

Need the proof of payment to confirm student registration.

Figure 3. 3 MSITA website details

3. 1. 2. 3 User Requirement

As the main concern of the development in MSITA website, we need to make the registration process and also maintenance of the website online; these are the requirement of the proposed solution:

Table 3. 2 User requirement

User Side

Administrator Side

User can register in the MSITA website as " website member" as option before they register to the course

Administrator panel

Student registered as website member need to fill " course to take in future/next trimester" in order to keep track the estimated number of course offered.

Add/Remove course

Student can fill the registration form trough MSITA website.

Automatic Email to all student registered

Student can upload scanned proof of payment trough registration form

Registration module for administrator

Student can fill option to take exam after course registration in order to get exam voucher

Financial Report of the year

3. 1. 3 Design

Design Phase required us to determine the logical and physical design of the system. We need to determine the system features and all other necessary requirement for the system. Later on in the next phase of the project we will transform the logical design into fully working system.

3. 1. 4 Implementation

The fourth phase is implementation. In this phase the physical design of the system will be programmed into a working system (Hoffer, et al., 2005). In implementation coding, testing, and installation will be included. In coding, the system will be programmed to a working system. After it programmed the system will be tested to find errors and bugs in the system. Lastly, during installation the system will be installed and ready to use.

In the phase 1 of the project implementation of the system is not going to be built. The implementation phase will be held during the second phase of the project.

3. 1. 5 Maintenance

The last phase of System Development Life Cycle is the maintenance phase. In this phase the system is ready in use by the user. During the phase a

change of the system can be made to satisfy the user requirements. In maintenance phase the system running is being maintained by the administrator and change or improvement can be done in this phase.

3. 2 Web Programming Language

The Course Registration is a web based system; therefore a web based programming language will be used to build the website. As the system is usable for Microsoft IT Academy, we will use ASP. NET technology with Visual basic Net scripting language.

3. 2. 1 ASP . NET

ASP . NET stand for Active Server Pages and it's a Microsoft Technology. ASP . NET runs on inside IIS (Internet Information Services) which is Microsoft's Internet Server (Kozyk, 2008). It comes with free components with the Windows Operating System. In ASP . NET file can contain HTML, XML, and Scripts. Below is the summary of advantages and disadvantages of ASP . NET

Advantages:

Easy Programming Model – with ASP . NET make a dynamic website is a lot easier (Hamilton, 2008; Kozyk, 2008). Moreover it works in all browsers.

Flexible Language Support – ASP . NET now support more than 25 . NET language such as VB. NET, C#, and Jscript. NET (Johansson, 2002; Koomsin, 2009).

Great Tool Support – you can develop ASP . NET using any text editor.

Rich Amount of Data Controls – using visual studio with ASP . NET developer can get many benefits for it rich amount of data controls.

In ASP . NET it's easier to maintain the code (Kozyk, 2008).

The ASP . NET framework is built entirely on an OOP paradigm and OOP concept (Kozyk, 2008).

Disadvantages:

ASP . NET only effective on Microsoft Products, and can only be used with IIS (Internet Information Server).

Using ASP . NET is quite expensive, because less of open source software can be used, and it only run in Microsoft Operting System (Kozyk, 2008).

ASP . NET have less database support.

Lesser tutorial available on the net.

Table 3. 3 ASP. NET quick review

FactorASP . NET

Ease of Use

High

Cost

High

Security

High

Code Sample & Tutorial

Low

Popularity

Standard

Database Support

Low

OS Support

Low

Multiple Programming Language

High

Object Oriented Language

High

Web Servers

Low

Mobile Application Support

High

Speed

High

3. 3 Databases

For the databases use for this project, we will use Microsoft SQL Server

3. 3. 1 SQL Server

Microsoft SQL Server is a relational model database server produced by Microsoft. Its primary query languages are T-SQL and ANSI SQL.

Advantages:

SQL Server support User Defined Functions.

SQL Server has rich Import/Export capabilities (Hobach, 2008).

SQL Server has rich Transaction Support.

SQL Server has the capability to perform such a backup transaction in an online environment (Hobach, 2008).

SQL Server provides better security.

SQL Server us T-SQL that is more powerful than MySQL dialect.

Disadvantages:

SQL Server only supported on windows platform.

SQL Server uses more hardware resources.

SQL Server has quite expensive cost.

Table 3. 2 Microsoft SQL Server quick review

FeaturesMicrosoft SQL Server 2005

OS

Windows XP, Windows 2000+

Licensing

Commercial

Install/Maintenance Process

High – Consuming resource

Drivers already installed on Windows

Yes

ODBC, JDBC, ADO. NET drivers available

Yes

Open Source products available for it

No

Updateable Views

Yes

Graphical View

Yes – Via SQL Management Studio

Ease of Use

High

Cost

High

3. 4 Chapter Summary

In the third chapter explain about the System Development Life Cycle (SDLC) that will be used in the project. This project is implemented following the phase in the SDLC, which is planning, analysis, design, implementation and maintenance. In this chapter also explain the Web Programming Language that will be used, and the reason why specific language is used. The programming language that will be used in this project is ASP. NET and the database chosen is Microsoft SQL server. Here are the development tools and languages that are used to help developing the system.

Table 3. 4 Summary of tools

Programming Tools

Compiler

Visual Studio

Image Editor:

Paint, Gimp

Local Server:

IIS7

Server Scripting

VB. NET

Client Scripting

JavaScript

Database:

Microsoft SQL Server 2005

Chapter 4Implementation Plan/Design4. 1. Proposed Solution

The Multimedia University Microsoft IT Academy online course registration need to be improved in order to achieve the objective defined. As the problem and user requirement are defined, we will then developing the new MSITA website that integrated with intelligence course registration and management system.

These are several features that will be added and improved in this system:

User side:

Online Registration

Online Chat Helpdesk Support System

Back-end side:

Admin Panel

Add/Remove course(s)

Add/Remove user(s)

Automatic Email notification

Financial Report

Security Enhancement

4. 1. 1. Online Registration

User Online Registration will be available through website where the user can register in order to enroll in course(s) that been set by the Super Administrator. User will fill in basic information and also " future course plan" that will be review by the Super administrator in order to determine whether the course will be open or not. User can also book the seat for taking the exam trough profile page after the user registered. The Online Registration

also required user pass and ID to ensure the security of the system for the user.

4. 1. 2. Online Chat Helpdesk Support System

As the user use the system, sometimes there are the needs to ask certain question regarding the course or registration. The chat system will allow the user to have an interactive chat with the administrator. They can ask question or ask any other support regarding the system. If the administrator is not online, the chat system will become email support system for the user to send any question they want to the administrator.

4. 1. 3. Admin Panel

Admin panel will be only accessible for the user with special privilege. It contains all the necessary information and privileges for maintaining the course.

The User privilege will be divided to several roles:

Table 4. 1 MSITA user roles

Super Admin

Instructor

Registered User

Website User

Register for Course

––?'A?

Access Admin panel

?'A??'A?

Add/Remove Course

?'A?

Add/Remove Course Instructor

?'A?

Add/Remove user

?'A??'A?

Scheduling the Course

?'A?

View Course Schedule

?'A??'A??'A??'A?

View Financial Report

?'A?

Super Admin: Person in charge for managing the entire course

Administrator/Instructor: Person in charge for specific course(s)

Registered User: Registered user that apply for course(s)

Website User: Website registered user that have not apply for any course(s)

4. 1. 4. Add/Remove course

Add/Remove course will be used to add or remove course from the system. It will also contain the details of the course.

4. 1. 5. Add/Remove user

Add/Remove user will be used to add or remove user from the system. Administrator can review the entire user that apply for course(s) and decide to accept/reject the user. User accepted/rejected then will receive automatic emails that inform them about the result of registration.

4. 1. 6. Automatic Email Notification

Automatic Email notification will remind the entire user that registered for course(s) about the schedule.

4. 1. 7. Financial Report

Financial Report will be automatically generated for 1 academic year.

4. 1. 8. Security Enhancement

Security of the system will be enhance by secure login, such as security question that will be asked when user register, and will be asked again when they want to login. More on the security enhancement will be developed in the next phase of the project.

4. 2. System Data Flow Diagram

The data flow diagram shows the flow of processes in the online course registration and management system in graphical representation for better understanding on the system work.

4. 2. 1. Context Diagram

Figure 4. 1 Context diagramIntelligence course registration and management system has 3 important entities, such as user, instructor, and administrator.

Figure 4. 1. Context Diagram

4. 2. 2. Level 0 Diagram

Figure 4. 2. Level 0 Diagram

Figure 4. 2 DFD level 0 diagram

Level 0 Diagram explain in detail each process that happen in the system. There are total 6 main processes inside the system which are Add/Remove course(s), Add/Remove Instructor, generate schedule, Add/Remove user(s), Generate Financial Report, and Register. Each process has different function and role. For example, when the user registers, the administrator can choose whether to approve/reject the registration.

4. 3. Database Design

This section will explain how the database will be implemented in this project. The designs consist of the Entity Relationship Diagram (ERD) and also the data Dictionary for the database.

4. 3. 1 Entity Relationship Diagram (ERD)

Figure 4. 3 Entity Relationship Diagram

Figure 4. 3. shows the entity relationship diagram of the Course Registration and management System. The User in database will be divided into 2 levels as the role is different, as 2 for Instructor and 1 for Registered user. 1 user can take more than 1 course. 1 instructor can also teach more than 1 course.

4. 3. 2. Data dictionary

Table 4. 2 User table

Table NameAttribute NameTypePK or FKReferenceDescription

User

User_ID

Integer

PK

User student/staff ID

User_Level

Integer

User privilege level

loginID

Varchar(10)

Login ID for website

password

Varchar(10)

Password for website

F_Name

Varchar(20)

First Name

L_Name

Varchar(20)

Last Name

Faculty

Varchar(30)

User Faculty

Year

Varchar(10)

Year in MMU

Contact_Num

Integer

Contact Number

Email

Varchar(30)

Email

Course_ID

Integer

FK

Course

Course Taken/Administer

Invoice_ID

Integer

FK

Invoice

Invoice number

Table 4. 3 Course table

Table NameAttribute NameTypePK or FKReferenceDescription

Course

Course_ID

Integer

PK

Course ID

Course Name

Varchar(20)

Course name

User_ID

Integer

FK

User

User registered/Administered

Invoice_ID

Integer

FK

Invoice

Invoice ID

Seat_Left

Integer

Number of seat left

Trimester

Integer

Course offered time

Session

Varchar(10)

Academic Session

Table 4. 4 Invoice table

Table NameAttribute NameTypePK or FKReferenceDescription

Invoice

Invoice_ID

Integer

PK

Invoice ID

Payment_Date

Date

Date of Payment

User_ID

Integer

FK

User

User ID

Course_ID

Integer

FK

Course

Course ID

Table 4. 5 Schedule table

Table NameAttribute NameTypePK or FKReferenceDescription

Schedule

Schedule_ID

Integer

PK

Schedule ID

Course ID

Integer

FK

Course

Course ID

Class_num

Integer

Class meeting number

Class_date

Date

Class Date

Class_time

Varchar(10)

Class Time

Meeting_place

Varchar(10)

Class venue

4. 4. Interface Design

Interface is a boundary across which the system can interact or communicate with the user. As the system will be an online course registration, the site look and feel is very important to deliver extensive information for the user. The interface design will be implemented in the system as close as the design that being planned. However, further improvement will be added.

4. 4. 1 Main Page

Figure 4. 4 Main page

The main page will consist of all the necessary links for user to explore the content of the website.

The user can get information about the courses, as well as interact with the administrator if they online. In case the admin is not online, The chat panel

will be change to email support system where the user can insert their question to ask, and the admin will reply in form of email.

4. 4. 2 Registration Page

Figure 4. 5 Registration page

The registration page for the user will be implemented as the design above, where the user needs to submit their profile in order to register. The registration page gives the user the freedom to enroll the course directly or as normal user where they can get any updates from Microsoft IT Academy Multimedia University.

4. 4. 3 Login Page

Figure 4. 6 Log in page

The login page where the user need to input their username and password in order to be authenticated.

4. 4. 4. Admin Panel

Figure 4. 7 Admin panel

Admin panel can be accessed only by the administrator and the instructor. Administrator will get notification of important event, such as new user registration status. Administrator can add, remove, review, adding schedule, and view financial report from this page.

4. 4. 5 Add/Remove User

Figure 4. 8 Add/remove user

The administrator can review user profile then decide to approve or reject user registration.

4. 5. Chapter Conclusion

This chapter explained the implementation phase of the system. The user requirement is put as features for the future development. The databases as well as the user interface are also explained in this chapter. The future system will be develop based on the design plan and will be review and improved in the next phase of the project.

Chapter 5Conclusion5. 1. Objective Review

The first phase of the Final year Project will be developing the problem specification and design. The paper already stated all the objective need to be achieved for the Intelligence Online Course Registration and Management System, such as:

To study existing course registration system in Microsoft IT academy of Multimedia University. Analyzing current course registration system, by interviewing the stakeholder of the system.

To propose an online course registration and management system.

To identify the user requirement for online course registration and management system.

To develop an online course registration and management system.

To evaluate the online course registration system that been develop.

Existing Course Registration system

The course registration for Microsoft IT Academy in Multimedia University currently is using manual method in order to enroll the course. The user has to download the form trough website and submit it to the instructor together with the official receipt from Finance division. This flow is time consuming and need to be improved.

5. 1. 2 Online Course Registration and Management System

As the problem stated before, an online course registration and management System is very important in order to improve the current course registration system. User can easily register for the course from anywhere, anytime and minimizing the need of paperwork. Administrator and instructor also get the benefit of the online course registration system as they can control the flow of registration easily and get the information they need from the system. With the system, it will also prevent the time consume by using manual method and prevent errors.

5. 1. 3 User Requirement

In order to develop the intelligence course registration and management System, the user requirement must be listed to have a better understanding of what the stakeholder need from the system. Below are the user requirements for the system.

Table 5. 1 User requirement

User Side

Administrator Side

User can register in the MSITA website as " website member" as option before they register to the course

Administrator panel

Student registered as website member need to fill " course to take in future/next trimester" in order to keep track the estimated number of course offered.

Add/Remove course

Student can fill the registration form trough MSITA website.

Automatic Email to all student registered

Student can upload scanned proof of payment trough registration form

Registration module for administrator

Student can fill option to take exam after course registration in order to get exam voucher

Financial Report of the year

5. 1. 4 Develop an Online Course Registration and Management System

For the first phase of the Final Year Project, we already stated the implementation and design plan for the intelligence online course registration and management system.

Below are the lists of feature that will be implemented for the system.

User side:

Online Registration

Online Chat Helpdesk Support System

Back-end side:

Admin Panel

Add/Remove course(s)

Add/Remove user(s)

Automatic Email notification

Financial Report

Security enhancement

The system will be developed using ASP. NET technology with Microsoft SQL as the database. Beside of the technical feature, the security of the website will also be improved to avoid unauthorized access to confidential data that been kept in the system. The implementation of the system will be continued in the next phase of Final Year Project

5. 1. 5 Evaluation of Online Course Registration System

After the system is finished, the system will be evaluated in order to improve the feature in the future. This evaluation will be done in second phase of the final year project.