DEVELOPING A DECENTRALIZED WEB-BASED ACADEMIC INFORMATION SYSTEM USING SCRIPTING TECHNOLOGY

BY

RYAN FEMENTIRA BAYHONAN

COLLEGE OF ARTS AND SCIENCES
ATENEO DE DAVAO UNIVERSITY

MARCH 2001

DEVELOPING A DECENTRALIZED WEB-BASED ACADEMIC INFORMATION SYSTEM USING SCRIPTING TECHNOLOGY

An Independent Study
Presented to
The Faculty of the Computer Science Department
Ateneo de Davao University

In Partial Fulfillment
Of the Requirements of Degree
Bachelor of Science in Computer Science

By

Ryan Fementira Bayhonan

March 2001

The independent project entitled:

DEVELOPING A DECENTRALIZED WEB-BASED ACADEMIC INFORMATION SYSTEM USING SCRIPTING TECHNOLOGY

Submitted by **Ryan Fementira Bayhonan** has been examined and is recommended for oral defense.

Ms. Jennifer J. Balbuena
Thesis Coordinator

Mrs. Ma. Teresa T. Quindoy
Adviser

Mr. Edwin V. Marañon
Director/Adviser
Computer Science Department

ABSTRACT

Since the early 1990's, some academic institutions have been already using information technology such as the Internet as a tool for information dissemination. Presently, there is a much wider interest as information technology begins to provide greater opportunities for communication, information gathering, and other transactions through dynamic web pages.

Dynamic web pages are not possible without the aid of scripting technology tools. Scripting technology is the latest information technology tool that provides a simplified, fast way, new and better approach of developing web pages. It enhances traditional or static pages into dynamic pages. It can also access stored information from databases and display it over the Internet.

This study aims to provide a new and improved approach of disseminating curriculum information over the Internet by using the latest scripting technology tools. One of the actions taken by the study was the use of a database file created in Microsoft Access to handle the organization of identified curriculum information components and the development of a database-driven application created in Active Server Pages with embedded scripting language.

CHAPTER I

Introduction

1.1 Background of the Study

Information is a critical resource of an academic institution, as fundamental as energy or machines. It is the indispensable link that ties all of an institution's components together for better operation and coordination in a competitive environment. Today, many colleges and universities use Information Technology (IT) such as the Internet, also known as the World Wide Web (WWW), as a tool for information dissemination.

IT enables educators to publish their works, writings, curriculum information and other important facts about the institution. And with the presence of the WWW, giving up-to-date information is no longer a dream but a reality. WWW also gives students and educators the opportunity to present their works to a potentially limitless audience throughout the world.

Despite the fast changing phase of technology and the tremendous potentials IT has to offer, many academic institutions still use IT in primitive ways especially in the area of disseminating information through the WWW [Berenfeld, 1994]. These primitive methods involve the process of getting curriculum information from the teachers and then given to the technical staff to be coded into an Internet programmable language, called Hypertext

Markup Language (HTML). These methods are time consuming for the teacher and the technical staff as well.

Hence, this study will basically present a powerful alternative in disseminating academic information in the WWW.

1.2 Statement of the Problem

The study seeks to answer the general problem: How to develop a Web-based academic information system that updates information in a decentralized manner and requires minimal technical assistance.

Alternatively, the study will also address the following minor problems:

1. What are the main components needed in the web-based academic information system?
2. How would these components be organized by the system?
3. What kind of information technology tools should be used as the approach of the study?
4. How would a decentralized academic information system be beneficial to academic institutions?

1.3 Objectives of the Study

The general objective of the study is to develop a decentralized Web-based academic information system that would display up-to-date information of curriculum information.

Conversely, the study aims to attain the following specific objectives:

1. To be able to identify important components needed in the Web-based academic information system from the perspective of selected major academic institutions in Davao City
2. To design and create an efficient *database management system* or DBMS that would handle the organization of the identified components
3. To use the latest, advanced and proven information technology tools that are out in the market
4. To show and emphasize the benefits of bringing curriculum information through the WWW in a decentralized manner that requires less technical assistance with the use of current IT tools

1.4 Significance of the Study

This study will assist all academic institutions in coping with its developing and competitive environment. The study abrogates the traditional way of sending information through the WWW by using modern approaches of uploading information such as the use of the latest and advanced IT tools. These new approaches put a particular academic institution into a competitive edge in terms of giving relevant and up-to-date information to its current and prospective clients.

1.5 Scope and Limitations of the Study

The study is aimed to develop a fully operational system that uses the latest and advanced information technology tools, particularly the *scripting technology* tools, to improve an academic institution's manner of publishing curriculum information into the WWW. However, the study will not include the development of other IT systems of an academic institution such as an online enrollment and student information system.

Although database, DBMS and HTML principles are also used, the study focuses mainly on the application of various scripting technology in the

development of a decentralized web-based academic information system. Consequently, databases, DBMS, HTML, and other principles are not discussed at length in this study.