**Chapter 1**

**THE PROBLEM AND ITS SCOPE**

**Introduction**

The impact of innovation in the field of information and communication technology have paved the way for the development and rise of web based systems in most institutions both local and national colleges. The operations of the computer are effortless in processing record systems such as creation of data records, storing, filing and retrieval of data. Web- based systems big impact on cost, accessibility and availability of educational services to many, had most educational institutions particularly locally funded colleges scrambling to web based technology to enhanced learning outcomes in classrooms and even to provide excellent and reliable services to the clients.

Yao defined that Web provides a new medium for gathering, storing, processing, presenting, sharing, and using information. Services in most educational institutions in this era such enrolment, class scheduling, grade inquiry, and even academic grade reporting are done through web portal. Issues in rendering an effective and efficient service is increasing as the number of student population increases yearly, yet transaction processes is still done manually. Transaction processes like Faculty and Student Loading and the Student Grade Report. Faculty load report is the distribution of workloads among faculty members which require thorough preparation and when done manually, it is time consuming. Study load report of students is as important as the Faculty Load Report. Student’s schedule in a particular semester is reflected on the Study Load. Resources include instructors, classrooms and the students and all of these must be efficiently and carefully matched for optimum utilization. Harris states that one of the major responsibilities of a faculty aside from teaching is to evaluate student’s output. School grading and reporting systems are designed to serve a variety of functions in the school. Grade report plays an important role in instructional assessment, report to parents, administrative and guidance uses. Grading components provide a framework for assigning a numerical grade (percentage score) for each student and when there is an increased population of student; the number of works of the registrar and student’s grades to be processed has also increased.

Most Colleges in the Philippines including Gov. Alfonso D. Tan College in Tangub City are still using the manual system in distributing faculty member’s schedule, student schedules in a particular semester and even in recording and retrieving students’ grades. Managing the teachers schedule has never been easy for this has a great effect on the student’s course schedules. The administrator of school department such as Dean and Program Head had difficulties in organizing schedules for the faculty members and even distribution of faculty load using manual system consumes more time and is not organized. Quite often the manual methods employed will result in schedules which do not serve the best interest of either students or faculty. Moreover in the manual system of generating student load is also time-consuming and once the schedule is prepared revision may be difficult, and creation of an alternate schedule is a laborious process. Aside from load report, distribution of grade report is done manually, yet database system is used to encode students’ grades. The Registrar’s Office encoded the grades of the students once the instructor submitted their grade sheets. Registrar’s Office will release student grade as soon as they finished encoding and that students could only get their grade report at the Registrar’s Office. Hence Web-based faculty- student loading and grading report system may offer some worthwhile benefits to the cited issues of Gov. Alfonso D. Tan College in Tangub.

Therefore, the proponent intend to develop a Web-based Faculty-Student Load and Grade Report System that will automate the process and make an online portal in retrieving class schedules of both faculty and students and in accessing students’ grades at the end of every semester.

**Theoretical Framework and Conceptual Framework**

A waterfall model or system life development cycle supports the theoretical framework as the basis in developing the proposed system. In “Waterfall” approach, this describes the whole process of the proposed web-based system development which is divided into separate process phases.

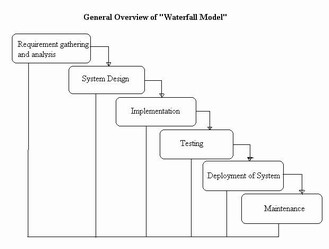
The phases in Waterfall model are: Requirement Specifications phase, Software Design, Implementation, Testing, System Deployment and Maintenance.

Fig. 1 Proposed System Model

The first phase involves gathering information about the needs and defining workflow of the system, in the clearest possible terms, the problem that the proposed web-based system is expected to solve. Second phase is system design that involves defining the hardware and software specifications, specifying performance and security parameters, designing database structure, choosing the IDE and programming language and interface connectivity. Third phase- Implementation, this step consists of actually constructing the proposed web-based faculty-student load and grade report system as per the design specification(s) developed in the previous step. The fifth phase is integrating the whole system flow to methodically verify to ensure that they are error-free and fully meet the requirements. The installation phase represents the steady state of the system developed on the computer. This involves preparing the system for installation and use at the customer site. The maintenance phase is the longest phase of the SDLC. In this phase the software is updated to fulfil the changing customer need, adapt to contain changes in the external environment, correct errors and lapses previously undetected in the testing phase and enhance the efficiency of the software.

**Objectives of the Study**

The following are formulated objectives:

1. To reduce time consumed in accessing the students’ grades, profile and class schedules of both students and faculty;
2. To search faculty and students’ classes online;
3. To gain web-based access on grade inquiry and submission of grades;
4. To provide availability of information thru web portal to the end users.

**Significance of the Study**

The proposed Web-based Faculty-Student Load and Grade Report System will serve as a useful tool for the school administrator to minimize the time consumed in the retrieval of loading schedules for the teacher and student and in releasing of student grades and will prevent redundancy and deficiencies.

The finding of the study will benefit the following:

**To the Academe.**Using Web-based system is essential and beneficial for productivity. It lessens the time element in managing and generating of teachers’ and students’ schedules and releasing of students’ grades.

**To the Dean and Program Head.**This study will benefit the Dean and Program Head in organizing and retrieval of the faculty and student schedules.

**To the Registrar Personnel.**This system will help the Registrar Personnel in releasing students’ grades in a timely manner, thus giving quality service to its students.

**To the Faculty and Students.** This study will help the Faculty and Students of Gov. Alfonso D. Tan College to have an online portal in accessing and retrieving schedules and grades and minimized time consumed in processing the transaction.

**To the Future Researchers.** This study will serve as a reference and guide to future researchers.

**Scope and Limitation of the Study**

The proposed Web-based Faculty-Student Load and Grade Report System focuses on the viewing of faculty and student profiles, subject loads in a particular semester, encoding, accessing and printing of students’ grades online. The Administrator is the only one who will encode the subject loads of both faculty and student, and print summary grade report of the instructors. The administrator can add, edit, delete and view subjects, instructors and students. The system will have registration for the faculty and students and is password protected. It will store information and data; it has search options and has the ability to generate report. Only instructors have the access to encode grades of their students online and may edit grades upon the approval of the Registrar. Transaction processes in this system rely on internet connection.

Transactions not mentioned above are beyond the scope.

**Chapter 2**

**LITERATURE REVIEW**

The following are reviews, which show significant yearnings to the study. They are grouped into the following headings: Local Literature, Foreign Literature, and Local Studies, and Foreign Studies.

**Local Literature**

The increase in complexity means additional administrative manpower, workloads, and management information and data processing system. To meet the growing needs of education, colleges and universities as a result formulated new innovations, techniques and methods and streamline the complexity of operations. (William Caberos, 1979)

Most Colleges are taking measures to sustain high quality of education. Development plans are concentrating on office automation, IT infrastructure, staff development and web development.

**Foreign Literature**

Information retrieval support systems, Web browsers, and Web search engines extend the basic search functionalities of data retrieval systems exemplified by a database system. They provide basic functionalities to assist a user in the context of libraries and in the early stage of the Web. A user may need to perform many different tasks when finding useful information. The new tasks include understanding, analysis, organization, and discovery, in addition to the conventional tasks of search and browsing. (http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.6.3129)

Web-based Faculty-Student Load and Grade Report System intend to be a web portal for the services of the community college in Tangub City. This includes a gateway to retrieve or generate faculty loads and student schedules which are one of the major tasks of the institution to give quality services for all. Search and viewing process with the faculty and student loads and grade report can be done online and thus provides a timely availability of information.

**Foreign Studies**

CIS embodies a radically differentstrategy: All course-related data is stored in one central repositorywhere it can be accessed by both students and TAs for their specific purposes. Reports can be generated automatically and from up-to-date sources. The user interface is entirely web-based,that is any browser can be used to connect.

(HolgerGast, Albrecht Haug, R¨udiger Loos,Volker Simonis, and Roland J. Weiss, 2004)

The system will have registration for the faculty and students and is password protected. It will store information and data; it has search options and has the ability to generate report. Faculty profile, Student Profile, Faculty Load, Study Load of student and Grade Report of student(s) are the outputs generated by this proposed web-based system. Transaction processes in this system is dependent on internet connection.

**Local Studies**

An Integrated Information System is an expansion of basic information system achieved through system design of an improved or broader capability by functionally or technically relating two or more information system. (doi:http://dx.doi.org/10.7828/aitr.v3i1.129)

The proposed web-based faculty-student load and grade report system is an integration of two information systems the faculty and student schedules and the grade report. Gov. Alfonso D. Tan College of Tangub City can then carry out school transactions in an efficient way anytime and anywhere.

**Chapter 3**

**METHODS/SYSTEM DESIGN**

This chapter begins with the system model used of the proposed Web-based Faculty-Student Load and Grade Report System of Gov. Alfonso D. Tan College in Tangub City. This also includes the transaction processes on the Administrator, Faculty and Student side, the data flow and entity relationship diagrams, network topology and database security used that provides a conceptual framework of the study.

**Current System Model**

The current system flow uses manual operation and that no exact existing policy being followed and stipulated by the institution.

Current Data Flow Diagram

DEAN

Distributes Faculty loads

Entry the subject loads and schedules in a Faculty Load Form

FACULTY

Allow ACA for Academics and Dean signed

Submit Completed Faculty Load Form

Registrar

ACA for Academics

Faculty Load Report

**P1**

**P3**

**P4**

**P2**

Fig. 2 Current Data Flow Diagram of Submission of Faculty Load

STUDENTS

Fill-up 3

Schedule Forms

Submit completed Schedule Forms

DEAN/DEPT.SEC.

REGISTRAR

GUIDANCE COUNSELOR

Student Load Report

**P2**

**P1**

Fig.3 Current Data Flow Diagram of Submission of Student Load

FACULTY

Make Entry of Grades on Gradesheets

Submit completed Gradesheets

DEAN/DEPT.SEC.

REGISTRAR

DEPT. SECRETARY

Submission of Grade Sheet

Distribute Grade Sheets

**P1**

ACA for Academics

**P2**

**P3**

Fig. 4 Current Data Flow Diagram of Submission of Grade Sheet

**P2**

Find Student records

Input individual Student grades on respective Student files

REGISTRAR

Release of Grades

Distribute Student Grades

STUDENTS

**P1**

**P2**

**P3**

Fig. 5 Current Data Flow Diagram of Releasing of Grades

Proposed System Model

The main components of the system and their interactions are reflected in Fig. 6 and Fig. 7. A Use Case Diagram in Unified Modeling Language (UML) is used in documenting the system flow. The proposed web-based system requires registration of both faculty and student and is password protected. Administrator had the sole access in the registration process and only encoding of student grades is being limited on the Administrator’s side. Other involved transactions are Search Profile and Schedule Transaction, Viewing of Information and Grade Inquiry/ Print Transaction.

Administrator Faculty

Figure 6 Use Case Diagram for Administrator and Faculty

Student

Figure 7 Use Case Diagram for Student

**Proposed Data Flow Diagram**

The System Specification of Online Faculty-Student Load and Grade Report System form the basis for technical design, technical development, workflows, and procedures for using the output of the system.

**Inputs**

Profile and schedules of both faculty and students and grades of students at the end of the semester are required as inputs.

**Process**

Login, Registration of both faculty and students; Add, Edit, Delete, View and Search of subject loads, faculty and student profiles and Logout were part on the Administrator’s side. Log in, grade submission online, viewing of Personal Information and Subject loads and Logout are processes involved on the Faculty side. Log in, grade inquiry online and viewing of Student Profile, Course Schedules and Logout are transaction processes involved on the Student side.

**Outputs**

Faculty profile, Student Profile, Faculty Load, Study Load of student and Grade Report of student(s) are the outputs generated by this proposed web-based system.

**Data Flow Diagram on Administrator Side**

Request Login

Feedback

Add Faculty

Add Student

Add Subject

AddTermEnroll

Add Subjecttype

ADMINISTRATOR

Open the website

Login

Registration

eloadgrade

D1

Add Classschedule

eloadgrade

Edit Faculty

Edit Student

Edit ClassSchedule

Edit Subject

Edit Subjecttype

Edit TermEnroll

Update

View Profile, User\_Accounts, Subject\_Loads,

Profile Info

User\_Accounts

Subject\_Loads

Retrieve Information

Logout

D1

Print

Fig. 8 Proposed Data Flow Diagram on Administrator Side

**DATA FLOW DIAGRAM ON FACULTY SIDE**

Retrieve Information

View Profile, Subject\_Loads, Grades

D1

Logout

Print

Feedback

Profile Info

Grades

Subject\_Loads

Request to View

Grade

Grade

Submission

eloadgrade

D1

Login

Open the website

Request Login

FACULTY

eloadgrade

Fig. 9 Proposed Data Flow Diagram on Faculty Side

**DATA FLOW DIAGRAM ON STUDENT SIDE**

View Profile, Subject\_Loads

Retrieve Information

Profile Info

Subject\_Loads

eloadgrade

D1

STUDENT

Open the website

Login

Grade Inquiry

D1

Retrieve Grades

Logout

Print

Grade

Request Login

Feedback

Request Grade

Request to View

eloadgrade

Fig. 10 Proposed Data Flow Diagram on Student Side

**Proposed Entity-Relationship Diagram**

This study uses Entity-Relationship Diagram to illustrate the graphical representation of the entities

and their relationships in a database.

reflects

ClassSchedule

FACULTY

STUDENT

StudentGrade

shows

TermEnroll

shows

SUBJECT

SUBJECTTYPE

has

reflects

has

Fig. 11Entity Relationship Diagram

**Proposed Network Topology**

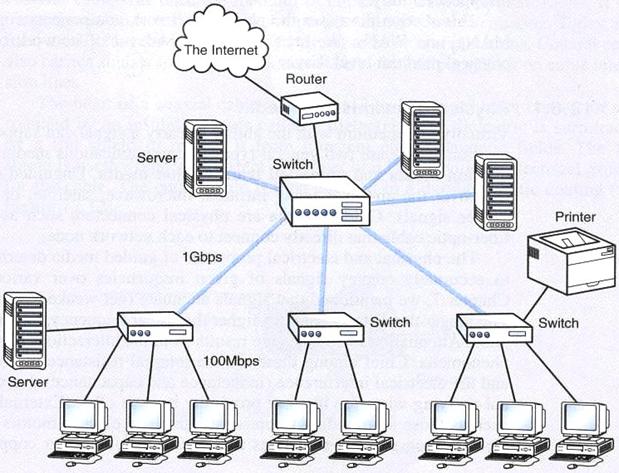
The network topology of this Web-Based Faculty-Student Load and Grade Report System uses wired and wireless connectivity.

Fig. 12 Proposed Network Topology

**Proposed Database Security**

This web-based system requires MySQL in designing its database structure. The Database name is “eloadgrade” and compose of 7 tables namely: student, faculty, classschedule, subject, subjecttype, termenroll, studentgradeand login. PHP is used in coding the system. A Login is required for a user to enter the main page to ensure security. The goal of this system design is to help ensure a clear understanding of what are supposed to build in satisfying overall school intelligence needs, and to ensure internal standards and best practices are met.

**CHAPTER 4**

**SYSTEM AND HARDWARE REQUIREMENTS**

**Hardware Requirements**

Server

15” AOC LCD Monitor

Fast Compaq dual Core 2.8 Ghz

2GB RAM

500GB Hard Disk

UPS

Workstation

12” or 15” AOC LCD Monitor

Intel Pentium 4

2GB RAM

**Programming Tools**

To realize the system, WampServerand the database is MySQL. PHP and HTML are used in coding the system. PHP is a powerful programming language that lets you build dynamic web pages [2]. HTML is a special kind of text document that is used by Web browsers to present text and graphics [13]. MySQL is an impressive relational database management system used to build commercial quality databases [2].

**User’s Interface**

Adobe Photoshop is used to design the interface of the system to make it more enticing to the users. The administrator side has six menu: Registration, User Accounts, Profile, Load Subject, Schedule and Logout. There are two clients in this system, the faculty and student. The faculty main page has 5 menus: My Profile, My Schedule, Grade Submission, Grade Viewing and Logout. The Student main page has 5 menus to choose namely: My Profile, My Schedule, Grade Inquiry and Logout.

**System Support**

The people who are involved and authorized to use the system are the following:

System Administrator- a person who is responsible in managing the administrative site. He is responsible for inserting, deleting and updating information such as profiles and schedules of students and faculty of GADTC. He can view and add user accounts.

Database Administrator- responsible in environmental aspect of the database.

Programmer- responsible in coding and troubleshoot the system errors.

Faculty – the one who will make an entry on his/her student grades.

**CHAPTER 5**

**SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS**

This chapter presents the summary of the system processes, the findings arrived based on the problems, the conclusions specifically on its importance in releasing students’ grades and its recommendation that could be of greater help for future studies.

**SUMMARY**

The proposed Web-based Faculty-Student Load and Grade Report System includes transaction like Registration of Faculty and Students which will then be as the basis in accessing the system and viewing their respective personal information and any possible updates, Grade Inquiry, Submission of Grades and Viewing of Class Schedule transaction of both faculty and student of Gov. Alfonso D. Tan College. This web-based system can reduced the time consumed in accessing students’ grades, profile, and class schedules of both student and faculty. The automation can then provide availability of information anytime and anywhere.

**FINDINGS**

Based on the problem, the following are addressed upon:

1. The Web-based Faculty-Student Load and Grade Report System reduced time consumed and produced an accurate result in accessing information (profile, class schedules, and grades) as needed.
2. Faculty and students’ class schedules can be searched online
3. The students and faculty gained web-based access on grade inquiry and submission on a particular semester in a particular Academic Year.
4. Availability of information thru web portal can be provided anytime and anywhere.
5. Updates on users’ profile can be done by the administrator of this web-based system.

**CONCLUSION**

The Web-based Faculty-Student Load and Grade Report will help the personnel of the Registrar Office of Gov. Alfonso D. Tan College as it fulfills one of their important tasks which are the releasing of students’ grades on time. With this web-based system, the Registrar’s Personnel can provide a great quality service to the students and can uplift the image of the college. Accessing of information anytime and anywhere can be of great help to the students and faculty of Gov. Alfonso D. Tan College.

**RECOMMENDATIONS**

Based on the Study, the proponent recommends:

1. That the proposed GADTC Online Faculty-Student Load and Grade Report System should be used and implemented. This online system would be of great help in the retrieval of information such as the grades of the student, profiles and class schedules of both the faculty and students of the College.
2. That the College must provide a certain stage in the Enrollment process that will cater the registration of students and entry of class schedules.
3. That the administrator (the one who will input the data and manage the system) must be computer literate and must understand the whole process of the system to maintain the correctness of output data. He must also responsible in updating information of students and faculty to maintain the reliability of the system.
4. That the faculty should understand the process of the system and must be responsible in the submission of grades of their respective students after every end of the semester two weeks after the examination.
5. That the College must use the computer facilities of E-lib to facilitate the instructors in the submission of their grades online.
6. That the following topics for future proponents should be considered for future study:
7. GADTC Enrollment System
8. Online Alumni System of GADTC
9. College Library Login System
10. E-lib Users Monitoring System

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