



Alkan University College Student Information Management System

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Abstract: The system which is developed in this project, student information management system, provides users a simple and efficient way of maintaining student information. The main objective of this project is to build system that allows users to track student information and manage the school teaching learning process easily. It can be used by educational colleges to keep student and student related data. Student information management system deals with academic related reports, news and the details of student, course, instructor, student grades and other resource related details. And also the system enables users to generate semester grade reports and student transcript at the end of graduation. The system was developed using technologies such as PHP, HTML, JAVA SCRIPT, CSS and MySQL. PHP, HTML, JAVA SCRIPT and CSS are used to build the frontend or user interface and the backend or database was built using MySQL Database.

Keywords: Management Information Systems, Record, HTML, SQL, PHP

1. Introduction

The project that is going to be developed is about the student information management system for university colleges [1]. As an overview, the system will be used by the university college's administration in student management. The student information management system can handle all details about a student, lecturer, administrator, registrar and department head. The details include lecture, subject details, student personal details etc. In case of current system, they need a lot of time, man power etc. Here, almost all work is computerized. So the accuracy is maintained easily. Student information management system is managed by an administrator. It is the job of the administrator to insert, update and monitor the whole process. Student information management system is a software which is helpful for students as well as the school authorities. All data are stored securely on MYSQL servers managed by the System administrator and ensures highest possible level of security. In the current system, all the activities are done manually. All these problems will be solved by using student information management system. The paper focuses on presenting information in an easy and intelligible manner which

provides facilities like registration and profile creation, view status of student's, thus reducing paper work and automating the record generation process in an educational institution.

1.1. Proposed System

In this proposed system, the provision of adding the details of the students will be carried out by teachers and administrator. Another advantage of the system is that, it is very easy to edit the details of the students and delete a student when it is found unnecessary. The marks of the student are added in the database and students can view the marks whenever they want.

In this proposed system has several advantages

- User friendly interface
- Fast access to database
- Less error
- More Storage Capacity
- Search facility
- Look and Feel Environment
- Quick transaction
- Easy to handle and feasible.

1.2. Problem Statement

The data in this system are kept manually especially after the end of every semester which makes it difficult to search data after a good number of years when a student need to know some of his details. It takes time to search on the pile (large) of files.

Some of the problems are the following: -

- It is time consuming to record files
- Wastage of material
- Duplication of paper
- Delay in bringing document to those who need it
- No system for properly transferring or removing of inactive files.
- Files get lost
- Costly
- Not efficient
- Error prone
- Difficulty to integrate data
- Data redundancy
- Difficulty of locating & finding files dependent each other.

1.3. Objectives

1.3.1. General Objective

- The general objective of the project is to develop the Alkan university college student information management system which allows users to track student information and manage the school teaching learning process easily.

1.3.2. Specific Objectives

In order to attain the general objective, the following lists of specific objectives are set:

- Perform a requirement analysis to find out the system functional and non-functional requirements.
- Design the system using object-oriented models for understanding the system and to make the implementation easy.
- Design the database for storing student information using MySQL.
- Implement a web application using PHP, CSS, and apache web server.
- Design web interface that allow students to view result online.
- Design web interface that allow students to download course material.
- Test the performance and reliability of web application.

1.4. Methodology

1.4.1. Data Collection

The methods used in data collection are questioners, site observation, interviews and document of analysis that are references or indirectly related with them of the student information management system.

- Site observation: actual observation of the organization.
- Interview: by asking the employee of the organization.

- Document analysis: reading the document available in the organization.

1.4.2. Design Methodology

The team decides to use object-oriented methodology because of the flowing reasons:

- Easier maintenance.
- It is known by the group members.
- Unaffected to change.
- Its flexibility: OOPs are really flexible in terms of using implementations [2].
- Ease of understanding object-oriented models due to a consistent underlying representation throughout the development process [3, 4].
- Ease of modification and extensibility of object-oriented models [3, 4].
- Ease of reuse of object components from previously designed systems [3, 4].

1.5. Organization of the Document

This document contains five Topics. Topic one defines and describes concepts with regard to SIMS, aiming to give a general view to the reader of the document about tasks or activities which need automation in the university environment. Topic two explains system design. Topic three presents the technology used to develop this system. In the remaining topics, user interface design and conclusion are briefly explained.

2. System Design

The Data Flow Diagram (DFD) is a graphical representation of the “flow” of student information management system. The data flow diagram can also be used for the visualization of Data Processing [5]. DFD shows the interaction between the system and outside entities. This context-level DFD is then “exploded” to show more detail of the system being modelled. A DFD represents flow of data Movement of data through the different transformations or processes in the system are shown in Data Flow Diagram of Figure 1.

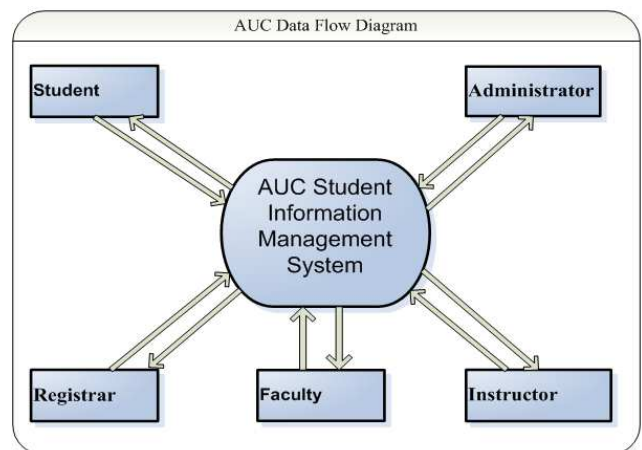


Figure 1. Data Flow Diagram.

2.1. System Requierments

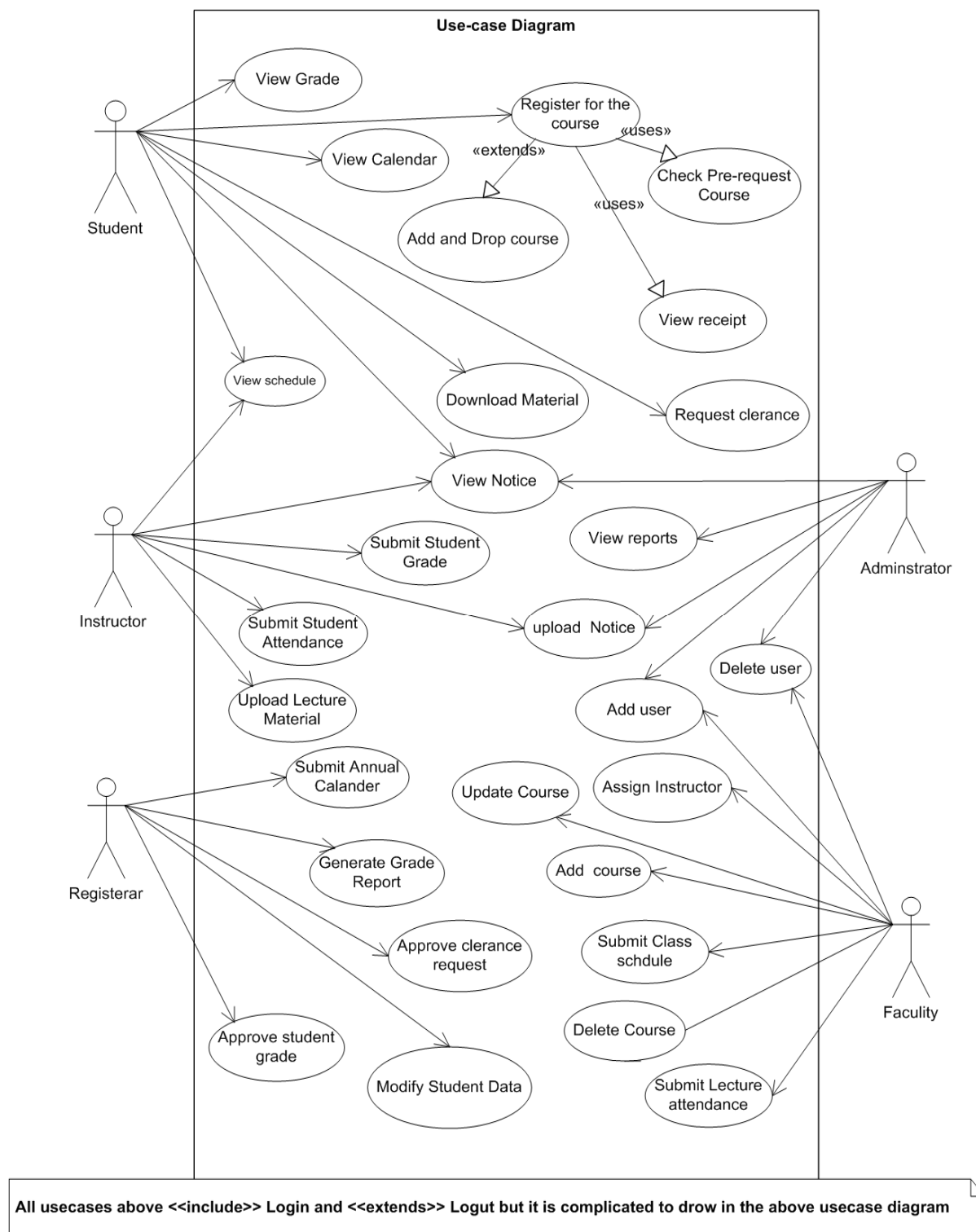


Figure 2. Alkan University College SIMS Use Case Diagram.

2.2. Functional Requirements

Functional requirements, according to [6] try to focus on the intended behavior of the system or what the system will do. Accordingly, the tasks that the project will do are listed as

follows:

USER REQUIREMENTS

Student:

REQ-1: The system shall authenticate before accessing

system.

REQ-2: The system shall display Notice.

REQ-3: The system shall allow students to view their academic status/grades.

REQ-4: The system should allow students to view the notice information.

REQ-5: The system shall display student's detail.

Registrar:

REQ-1: The system shall require login before providing any function for registrar.

REQ-2: The system shall allow registrar to change his /her account information.

REQ-3: The system should allow registrar to view the notice information

REQ-4: The system shall calculate cumulative GPA for any student.

REQ-5: The system shall search any student detailed information.

Instructor

REQ-1: The system shall require login before providing any function for any instructor.

REQ-2: The system shall allow uploading notice.

REQ-3: The system shall display lists courses that are taken by students to instructors.

REQ-4: The system shall take attendance of students from the instructor

REQ-5: The system shall import the academic grade of students from the instructor.

Administrator

REQ-1: The system shall require login before providing any function for administrator.

REQ-3: The system shall allow the user to control the overall activities in the system.

REQ-4: The system shall allow administrator to change his /her account information.

REQ-4: The system shall remove wrong entries from the system.

REQ-5: the system shall view reports in different operations in the system.

REQ-6: The system shall ensure that the information entered is of the correct format.

2.3. Non-functional Requirements

Non-functional requirements or system qualities capture required properties of the system, such as performance, security, maintainability, etc. in other words, how well some behavioral or structural aspect of the system should be accomplished. [6]

The non-functional requirements of the system are described as follows.

Security:

- Security requirement is very important in this project, including privacy. The administrator (including course admin and system admin) should provide high security interface for user and protect their personal data. In order to achieve this requirement, the project team should set up some standards such as security policy,

system management handbook. In addition, use software and hardware to prevent, detect and correct the system, such as firewall, antivirus software, will reduce the risk of security.

- The external security should be provided by given the login authentication.
- There should be proper security regarding to the accessing of data by unauthorized user.

Performance:

- The system shall minimize errors and clear error message should be displayed that guide user to handle it.
- The performance of the functions and every module should be well.
- Improve performance by using computers or laptops that have high processor speed and RAM.

Usability:

- By training users to become familiar with the system and by designing user friendly interface, the end users are able to place an order within few response times.

Availability:

- The system will be available to its users with or without internet connection because users can have access to it using the local intranet from within the campus.

Correctness:

- The results of the function should be pure and accurate by validating or testing the system.

Portability:

- The software shall be deployed at any machine.

Reliability:

- Increasing the performance of the software will improve the reliability of the software.
- Storing backup data can increase reliability of the software.

Reusability:

- The data and record that are saved shall be reused if needed that's stored in backup.

Design Constraints:

- The system shall replace the existing system by providing more features in SIMS.

Documentation:

- Documentation will help the project team to make a knowledge management. Therefore, it is a necessary requirement. The documentation is including proposal, project report, and so on.

Quality Control:

- The system quality control is also important requirement. The system should be fast and efficient service to all users. Adaptability, availability, flexibility, and reliability are the key issues of this requirement. Using suitable software and hardware to develop the system, will enable to achieve this requirement.

2.4. Software and Hardware Requirements

2.4.1. Software Requirements

- PHP 5.0 and above
- APACHE HTTP Server

- Front End: HTML and JavaScript, CSS
- Web designing language: PHP
- RDBMS (Back end): MySQL
- Microsoft Windows or Linux
- The client of PC may use one of the following browsers:
 - Internet Explorer
 - Mozilla Firefox, Google Chrome etc.....

2.4.2. Hardware Requirements

According to [7] a web server that is capable of serving more than 1000 users should have the following specifications.

- Intel Pentium IV processor or equivalent or higher
- 512 MB Ram or Higher
- 20 GB HDD or Higher
- Network Connectivity

But for development purposes, any desktop or laptop computer can be used.

3. Technology Used

Since Alkan University College is a beige organization intend to design an interactive web application that user can utilize information easily from the sites and interact with the organization.

An interactive web application design requires the following

- Web Server software
- Server side programming script
- Database system
- Clint side language

For this specific project activity used

- VISIO
- Microsoft word 2007
- Apache server
- PHP scripting language
- MySQL database system
- HTML client side programming language

Why PHP?

According to [8], there are several types of web programming language that are used for making a site more dynamic. But, for this project chooses PHP scripting language to design this database. Because

- It's fast and easy
- It's cross platform
- It accesses everything
- It's free

Why MySQL?

According to [9], there are several reasons to use MySQL.

- It's quick and powerful
- It's improving all the time
- It's free
- Handles large database. MySQL with some database that contains 50,000,000 records and users MySQL with 60,000 tables and about 5,000,000,000 rows.
- All columns have default values. You can use insert a

subset of a table's columns; those columns that are not explicitly given values are set to their default value.

4. User Interface Design

Login Form:

The system starts with login page where the registered user can enter user name and password to be able to access the system. Figure 3 shows login form.

Figure 3. Login form.

User Registration Form

The user must have user name and password to login to in this system. This form is used to create user

Administration Page

Total users: 4 Active users: 3

Create New User

Figure 4. User registration.

Figure 5. Create new Department.

Figure 6. Add New student.

5. Conclusion

In this project developed an automated student information management system that facilitates the various activities taking place at university. All student data and information gathered in an organization can be saved and accessed at any time. So it is highly crucial to have student information management system. Which enables stakeholders get the required information without delay. This system is essential for colleges and college staff to decrease their work load.

The system developed in this project consists of windows and web applications. These are two different applications on

the same database. The windows application takes most of the activities such as offline student registering, transcript and report card generating. The web application facilitates attendance recording by the teachers, viewing reports and status of students and teachers.

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