CHAPTER 2

SYSTEM ANALYSIS

In this chapter, we will discuss and analyze about the developing process of Grading System including software requirement specification (SRS) and comparison between existing and proposed system. The functional and non-functional requirements are included in SRS part to provide complete description and overview of system requirement before the developing process is carried out. Besides that, existing vs proposed provides a view of how the proposed system will be more efficient than the existing one.

2.1 SOFTWARE REQUIREMENT SPECIFICATION

2.1.1 GENERAL DESCRIPTION

PRODUCT DESCRIPTION:

University grading System is a computerized system which help users (Super Admin, School, department and lecturer admins) to manage the student grading daily activity in an electronic format. It reduces the risk of paper work such as file lost which leads to missing grades, file damaged and time consuming. It can help user to manage the processing of student data and grades more effectively and timesaving.

PROBLEM STATEMENT:

The problem occurred before having computerized system includes:

File lost (Missing Grades)

When computerized system is not implemented file is always lost because of human environment. Sometimes due to some human error there may be a loss of student grades.

1. File damaged

When a computerized system is absent most grade sheets file is damaged and this also leads to loss of data – integrity which happens as a result of some human error

Such as spilling of water by some member on file accidentally. Besides some natural disaster like flooding or fires may also damage the files.

1. Difficult to search for student grades (records)

When there is no computerized system there is always a difficulty in searching for a particular student records if the records are large in number.

1. Space consuming

After the number of records become large the space for physical storage of file and records also increases if no computerized system is implemented.

1. Cost consuming

As there is no computerized system the to add each record paper will be needed which will increase the cost for the management of grading system.

2.1.2 SYSTEM OBJECTIVES

Improvement in control and performance

The system is developed to cope up with the current issues and problems of student grades. The system can add users (students, admins), validate users and is also bug free.

1. Save cost

After computerized system is implemented less human force will be required to maintain the grading system thus reducing the overall cost.

1. Save time

Admins are able to search for grade records by using few clicks of mouse and few search keywords thus saving his/her valuable time.

1. Option for online access

Student and Lecturer will be able to access the system online from anywhere.

1. Lecture Notes

Lecturer have a facility to upload lectures notes in a pdf file having size not more than 10mb

* + 1. SYSTEM REQUIREMENTS
       1. NON-FUNCTIONAL REQUIREMENTS

1. Product Requirements

* EFFICIENCY REQUIREMENT

When the university system will be implemented staff and user will easily access the system and grades management will be very faster.

* RELIABILITY REQUIREMENT

The system should accurately perform member registration, member validation, student learning resources, grades management etc.

* USABILITY REQUIREMENT

The system is designed for a user-friendly environment so that student and staff of the university can perform the various tasks easily and in an effective way.

* ORGANIZATIONAL REQUIREMENT IMPLEMENTATION REQUIREMNTS

In implementing the whole system, it uses html in front end with php as server-side scripting language which will be used for database connectivity and the backend ie the database part is developed using MySQL.

* DELIVERY REQUIREMENTS

The whole system is expected to be delivered in three months of time with a weekly evaluation by the project supervisor.

2.1.3.2 FUNCTIONAL REQUIREMENTS

NORMAL USER

1. USER LOGIN

Description of feature

This feature used by the user to login into system. They are required to enter username and password before they are allowed to enter the system. The username and password will be verified and if invalid username and password, the user will be redirected back to the landing page and not allowed to gain access to the system.

Functional requirements

- username is provided when they register

- The system must only allow user with valid username and password to enter the system

-The system performs authorization process which decides what user level users can gain access to.

-The user must be able to logout after they finished using system.

* REGISTER NEW USER

Description of feature

This feature can be performed by the super admin, school admin and as well as the department admin to register new user into the system (such as admins and lecturers and students).

Functional requirements

- System must be able to verify information

- System must be able to delete information if information is wrong

1.5 SEARCH STUDENTS

DESCRIPTION OF FEATURE

This feature is found in top level admins part. we can search for the details of a particular student.

Functional requirements

System must be able to search the database based on select search type

System must be able to filter student details based on keyword entered

System must be able to show the filtered student data in table view

1.6 GRADE ADDITION

DESCRIPTION OF FEATURE

This feature allows top and middle tier level admins such as super – admin, school – admin and departmental admin to add information such as student grade per semester and cumulatively.

Functional requirements

-System should be able to add detailed information about student grades.

-System should be able to display information to students individually in their respective dashboards.

2.1.4 SOFTWARE AND HARDWARE REQUIREMENTS

This section describes the software and hardware requirements of the system

2.1.4.1 SOFTWARE REQUIREMENTS

Operating system- Windows 7 – current Windows 11 is used as the operating system as it is stable and supports more features and is more user friendly.

XAMPP (Cross platform Apache + MariaDB + PHP + Perl) server that provides a local directory facility that the system runs on.

Database MYSQL-MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.

Development tools and Programming language- HTML is used to write the whole code and develop webpages with CSS, JavaScript for styling and user interactivity work and php for sever side scripting.

2.1.4.2 HARDWARE REQUIREMENTS

Intel core i7 2nd generation is used as a processor because it is fast than other processors an provide reliable and stable and we can run our pc for longtime. By using this processor, we can keep on developing our project without any worries. But also supports Intel core i3 and i5 quad core processors.

Ram 2 Gb (at least needed) is used as it will provide fast reading and writing capabilities and will in turn support in processing

2.2 EXISTING VS PROPOSED SYSTEM

* Existing system does not have any facility of lecturer’s login or student login whereas proposed system will have a facility of student login as well as lecturer login
* Existing system does not have a facility of online viewing of books submitted by lecturers whereas proposed system has a facility of online viewing of books
* Existing system does not have any option of lectures notes uploaded by lecturer whereas proposed system will have this facility
* Existing system does not have any facility to generate student progress reports as well as manage student data whereas proposed system provides admins with a tool to generate student progress reports.
* Existing system does not have any facility for student request and suggestions where as in proposed system after logging in to their accounts student can request on issue with regards their grades as well as provide suggestions to improve the grading system.

2.3 SOFTWARE TOOLS USED

The whole Project is divided in two parts the front end and the back end.

2.3.1 Front end

The front end is designed using of Html, CSS and Java script

* HTML- HTML or Hyper Text Markup Language is the main markup language for creating web pages and other information that can be displayed in a web browser.HTML is written in the form of HTML elements consisting of *tags* enclosed in angle brackets (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and </h1>, although some tags represent *empty elements* and so are unpaired, for example <img>. The first tag in a pair is the *start tag*, and the second tag is the *end*

*tag* (they are also called *opening tags* and *closing tags*). In between these tags web designers can add text, further tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items.

It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

* CSS- Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup

language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification

of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design).CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one the author specified.

. However, if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied.CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called *cascade*, priorities or *weights* are calculated and assigned to rules, so that the results are predictable.

* JAVA SCRIPT- JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications. JavaScript is a prototype-based scripting language with dynamic typing and has first class functions. Its syntax was influenced by C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics.

The key design principles within JavaScript are taken from the Self and Scheme programming languages. It is a multiparadigm language, supporting object-oriented, imperative, and functional programming styles. The application of JavaScript to use outside of web pages—for example, in PDF documents, site-specific browsers, and desktop widgets—is also significant. Newer and faster JavaScript VMs and platforms built upon them (notably Node.js) have also increased the popularity of JavaScript for server-side web applications. On the client side, JavaScript was traditionally implemented as

an interpreted language but just-in-time compilation is now performed by recent (post-2012) browsers.

2.3.2 BACK END

The back end is designed using PHP (used to query and interact with the Database) and MySQL which is used to design the databases.

* PHP- PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for *Personal Home Page*, it now stands for *PHP: Hypertext Preprocessor*, a recursive

acronym. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

* MYSQL- MySQL ("My S-Q-L", officially, but also called "My Sequel") is (as of July 2013) the world's second most widely used open-source relational database management system (RDBMS). It is named after co-founder Michael Widenius daughter, My. The SQL phrase stands for Structured Query Language. The

MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety

of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache,

MySQL, Perl/PHP/Python." Free-software-open source projects that require a full-featured database management system often use MySQL. For commercial use, several paid editions are available, and offer additional functionality.

Applications which use MySQL databases include:

TYPO3, MODx, Joomla, WordPress, phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large-scale websites,

including Wikipedia, Google (though not for searches), Facebook, Twitter, Flickr, and YouTube