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Student- LMS

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ABSTRACT- This project focuses on the creation of the learning management System, a web-based platform designed to offer a wide range of services to students and faculty members. The primary objective is to replicate the valuable
features and functionalities of an established information management system while introducing innovative enhancements to improve its usability and performance.

The rapid growth of school-wide learning

management systems (LMS) is changing the nature of school education. The difference of LMS in addition to the traditional learning model, apart from the analysis of other software systems, is small research. According to a 2014 report from the Educause Analytics and Research Center, 99% of universities have an LMS/LMS and 85% of faculty and 83% of students use an LMS. But this is not always the case. There was a time in the not-too-distant past when using an LMS was considered a novelty.
Among the e-learning tools in the market, Learning Management System (LMS) is considered as the most convenient and reliable elearning tool engines in the learning environment and is often the starting point of any web course. This paper provides a comprehensive and critical assessment of the potential impact of online systems on teaching in schools. In particular, it discusses the impact of learning management systems on instructional practice, student engagement, academic performance, and learning management and also discusses the methodology taken to implement a student learning management system.

In the development of this web application, modern web technologies and frameworks such as HTML, CSS, JavaScript, ReactJS, NodeJS, and MongoDB will be employed. To ensure scalability and high availability, the Learning management System will be hosted on a cloud-based server infrastructure.

In summary, the vision for the learning management System is to provide students and faculty members with an efficient and effective platform to oversee their academic endeavors and enrich their learning experiences.

Keywords – learning management System, programming languages, java, web- based learning, LMS, faculty, safe and secured databases.

I. Introduction

The aim of student Learning management is to improve existing teaching methods using computer equipment and general software. The system was designed to meet the requirements for efficient storage, accessibility and functionality, allowing schools to retain important information for long periods of time. Appropriate software and hardware are readily available and easy to use.

As the internet has grown, learning management system (LMS) technology has become more versatile, leaving instructors with fewer tools to teach remote students. Since then, most universities have integrated the LMS/LMS with other institutions' infrastructure systems, empowering teachers to take control of learning and providing users with the necessary training and support. Understanding the development and implementation of learning management systems is central to understanding teachers' choices to adopt alternative technologies and new teaching methods.

The learning management system is independent; It has better management capabilities, integrated authoring tools, and support for creating and publishing reusable learning programs. But despite their potential, many e-learning initiatives supported by education authorities, especially in developing countries, have been completely or partially abandoned.

We are creating a platform that allows students to
access and engage with the curriculum in advance so they can focus on active learning while learning online. This approach saves students time and creates a more efficient and effective online learning experience.

Users can browse the course, select the ones they want and add them to their curriculum. users can enter personal information in their profiles and track their progress. Finally, students can complete registration and start the course of their choice.

II. Literature Review

In online education, unwanted problems in students' interaction with computers often lead to frustration due to confusion. Effective learning depends on student motivation but is hindered by poorly designed systems. The accessibility of elearning and its ability to meet many needs require personalized delivery of digital information. Current efforts focus on education but fall short on teaching the operation of new systems to diverse user groups. In general, development requires user interaction and commitment to consider and meet the diverse
needs of students.[1]

Jason Rhode, Stephanie Richter, Peter Gowen, Tracy Miller in their paper Understanding Faculty Use of the Learning Management System said about the view of faculty on LMS and its use “The LMS remains a mainstay of online education infrastructure, with 85 percent of faculty confirming their use of the institution's LMS and 81 percent of chief online education officers reporting the LMS to be the technology that is most important to online programs. Institutional leaders recognize the importance of supporting faculty in their use of instructional technologies including the LMS, with faculty development ranked as the number one key issue
in teaching and learning in 2017”. [2]

The attractiveness of Learning management System is generally based on many aspects according to the paper published by HAMISH
COATES, RICHARD JAMES AND

GABRIELLE BALDWIN in 2005. There are

many aspects of attractiveness and like the first we can say is to increase the efficiency of teaching by providing a good platform for learning and teaching and providing best facilities. Second is by providing better technologies each and every institute can provide better facilities to their students it is like the competitions between institutions. Third is to like provide good web-based services to the users so that they can easily navigate from one section to other section and access the resources easily.[3]

A paper mentioned various issues like challenges faced by adopting Learning Management System. These issues are included like poor access to the internet can lead to a serious issue for adopting LMS nowadays because all areas in world have not good accessibility to internet. Other main issue according to paper can be maintenance and implementation of LMS. "Unfortunately however, three out of the five universities surveyed did not have proper maintenance strategies, which resulted into deterioration of the LMS services. One of the universities did not even have a technical unit to offer support to the users, while those that had them, were reported as either understaffed or insufficiently trained to be able to deal with the task at the level required". [4]

The literature reviewed in this study underscores the significance of user experience, technological integration, security, and efficiency in the development of the Student Learning Management System. Drawing from previous research, the project stands to benefit from a focus on user-centric design, the incorporation of modern web technologies, robust cybersecurity measures, and the potential for enhanced administrative efficiency.

III. Problem Definition

In today's fast-paced world, if you're looking for quality education that's both quick and budget-friendly, our website offers a wide variety of courses tailored to your interests and provide access to the best learning experiences available. Whether you want to enhance your skills, explore new subjects, or achieve your educational goals.

The purpose of the Student Learning Management System is to automate the existing manual educational processes using computerized equipment and comprehensive software. This system aims to fulfill the requirements of efficient data storage, accessibility, and manipulation, enabling educational institutions to store valuable information for extended periods. The necessary software and hardware are readily accessible and user-friendly for students.
The primary objective of our project is to develop a Student Learning Management System (LMS) focused on delivering highquality educational content. We are creating a web-based platform that offers a range of courses and modules. Users can browse these offerings, select the desired courses, and add them to their learning profile. Within the profile, users can input personal details and track their progress. Ultimately, learners can complete their enrollment and begin their chosen courses.

Our project will streamline the learning process within our university. We are developing a platform that allows students to access and engage with educational materials in advance so that when they participate in online classes, they can focus on active learning. This approach saves students time and creates a more efficient and effective online learning environment.

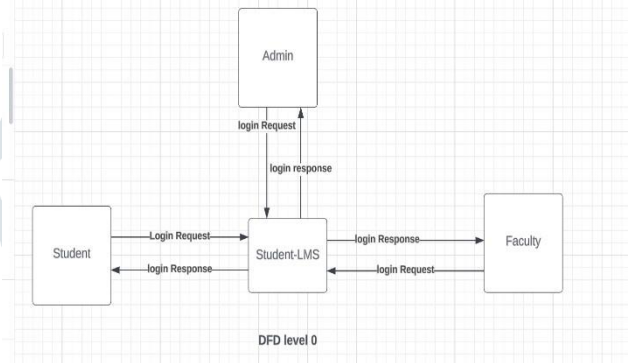
IV. Design

For the design document of our project, we have decided to use Data Flow Diagram (DFD) as it is one of the traditional ways of representing the flow of data of a process or a system. It is used by many information technology

professionals and system analysts to document and show users how data moves between different processes in a system. The DFD (Data Flow Diagram) of Student Learning Management System depicts the overall flow of data inside the system. Its focus is on the movement of data that enters and exits the system. Student Learning Management System 's DFD Diagram comes with three major levels which were level 0 (context diagram), level 1, and level 2.

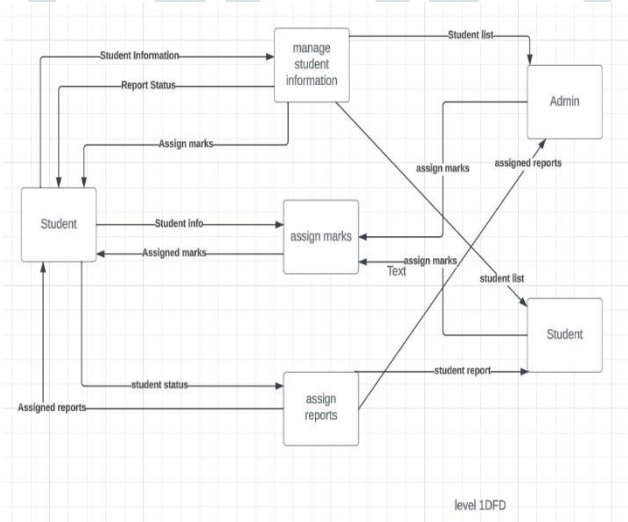
Level0:

A Level 0 DFD Student Learning Management System defines an abstract representation of a system or single process with external parties. This will show us the major processes, data flows, and data stores in the system, but will not provide any details about the internal workings of these processes. The main idea representing the key processes, users and data moving through the system.



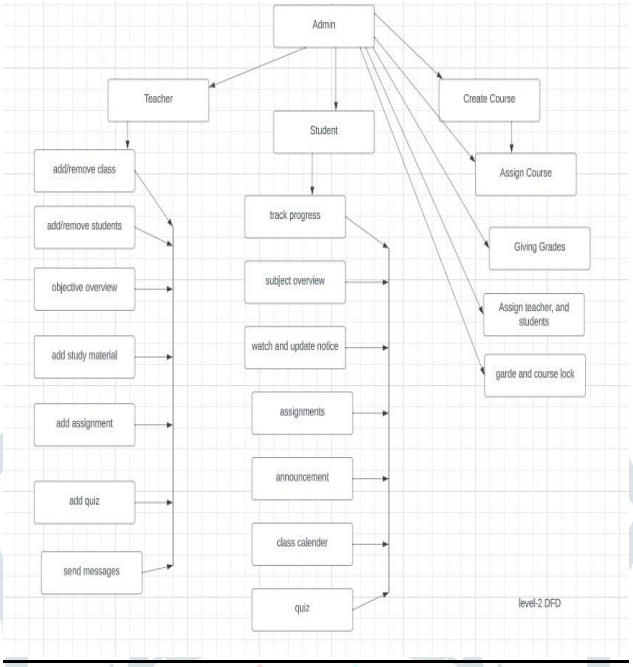
Level1:

Next to the University Report Processing System context diagram is the DFD Level 1 diagram. Its content is derived from the context diagram and is divided into subprocesses. This should tell the programmer which processes and inputs are included in the system. This level provides a more detailed overview of the system by breaking down the core processes defined in the Level 0 DFD into functional processes. Each business process is defined as a separate process in Level 1 DFD. The data flow and data storage associated with each business process are also shown.



Level2:

After introducing DFD levels 0 and 1, there is level 2 next to it. DFD Level 2 is the highestlevel data flow diagram abstraction in a university reporting system. Data processing is also emphasized by the embedded data store (database). The role of the database is to store information entering the system and to serve as an output source.



V. Objectives

Our Web Application project aims to provide a simple solution to the Problems that we discussed above. It provides an easy interface for both students and administrators to manage, update and retrieve their respective courses. The major objectives of our project is to:

- To ease the process of Data Retrieval.

- To provide Remote access of Report Cards of quizzes and assignments that would be very convenient for students.

- To provide Low Cost, User Friendly, Environmentally Conscious and Reliable way to do courses.

- Automates many of the subtasks associated with managing and updating reports.

VI. Use of Modern Tools in Design and Analysis

HTML 5

Our main tool is html, html 5 is the latest version of html. This release introduces new features to assist web application authors, introduces new elements based on research into common development practices, and focuses on defining clear qualification criteria for user agents to improve interoperability.

CSS

CSS is used to style web pages. Describes the appearance and format of a document written in a markup language. Provides additional functionality for HTML. It is commonly used in conjunction with HTML to change the style of web pages and user interfaces. CSS makes web browsing easier. It is easy to learn and understand and is used to control the presentation of HTML documents. CSS allows you to control text color, font style, paragraph spacing, column size, layout design, and more. It is HTML-independent and can be used with any XML-based markup language.

- **PHP:**

PHP is a general-purpose scripting language with a focus on web development. The PHP reference implementation is now produced by The PHP Group, and it was first established by Danish-Canadian programmer Rasmus Lerdorf in 1994. Hypertext Preprocessor (PHP). PHP is a widely used open-source general-purpose programming language that can be embedded in HTML.

Besides a long list of commands to generate HTML (like in C or Perl), PHP pages also have embedded code that does "something" (in this case, output "Hi, I'm a PHP script!"). The PHP code is wrapped in special start and end processing instructions that enable you to switch between "PHP mode" and "normal mode." It provided excellent support for our project and was really simple to use and implement.

- **Bootstrap:**

Bootstrap is an HTML, CSS and JS library that aims to simplify the development of web pages (rather than web applications). The main purpose of adding to a web project is to use the colors, sizes, fonts and layout chosen by Bootstrap for the project. Therefore, the most important thing is whether the developers have the responsibility to find the option they like. When added to a project, Bootstrap provides a simple template for all HTML elements.

JavaScript

JavaScript is required to program the behavior of web pages. JavaScript is a text-based programming language used both on the client and server side that allows the interactive creation of web pages. HTML and CSS are languages that define the structure and style of web pages, while JavaScript provides interactive elements to web pages that engage users. Common examples of JavaScript you can use every day are Amazon search boxes, news reports from The New York Times, or Twitter feed updates.

- **SQL**

SQL or Structured Query Language is the language we use to work with these relational database management systems. Data is all around us. We used to store our data on paper in big file cabinets, but we ended up storing it on the internet called databases. To manage the database, you use a software application called a database management system or DBMS. Instructs it to connect to the database management system to query or modify data.

VII. Conclusion.

In this paper, we have highlighted the challenges associated with traditional student learning Management Systems (LMS), including issues related to low information recall, poor information precision, and extended query times. In response to these challenges, we introduce the concept of the Student Learning management System, a solution designed to significantly enhance data retrieval processes and empower students with the ability to access courses and material conveniently, regardless of their location or time.

VIII. Future Scope

In the further future, we are going to add various more functionalities to our Student Learning management system which will include taking attendance and also an option of blockchain for credentials the data to improve flexibility of the platform.

We will also do work on mobile friendly LMS which will give a responsive design for use on various devices.

We will add a ranking system which will rank student according to their marks in different subject and congratulate the toppers.

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