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PIET LMS

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Abstract

The planning, execution, and access of a particular learning process are all supported by a learning management system, which is aweb-based technology. It is used for e- learning practices and is made up of twocomponents: a server and an interface that can only be accessed by users of a certain organization and is maintained by the administrator. All the thorough lecture notes, assignments, and videos are available in our learning management system.

Learning management systems were created to locate training and education gaps using analytical data and reporting. In addition to serving as a platform for a variety of purposes, including asynchronous and synchronous courses, LMSs are primarily focused on the delivery of online learning. Alearning management system (LMS) may provide classroom management forinstructor-led instruction or a flipped classroom in the higher education sector. According to a user's skill profile, modern LMSs automatically propose courses to thembased on clever algorithms.

Keywords

Learning, technology, ReactJs, NodeJS, ExpressJS, password.js, React- bootstrap, HTML, CSS

Objective

The "PIET Learning Management System" project is what we are working on. The primary goal of the learning management system is to improve learning. Our learning management system not only transmits the course materials but also allows for control over accessibility and regular updates to the course materials and PowerPoint presentations.

An online integrated program called a learning management system (LMS) is used for designing, delivering, monitoring, and reporting educational courses and outcomes. It may be utilized to support both conventional face-to-face training and settings for blended/hybrid and online learning. LMS software is used in schools to organize, carry out, facilitate, evaluate, and keep track of student learning. All of these actions take place behind a virtual wall that offers some level of privacy, security, and authentication.

Introduction

An LMS is a software application that provides a centralized platform for managing and delivering educationalcontent and training programs. It is typically used by educational institutions, businesses, and other organizations to manage and deliver online courses, training programs, and other learning activities. The purpose of an LMS is to simplify the process of creating, delivering, andtracking learning activities and resources for students, employees, or other learners. An LMS provides a flexible and efficient way to access educational content and resources, enabling learners to engage witheducational content, participate in discussions, collaborate with peers and instructors, and track their progress. AnLMS typically consists of several key components, including: User authentication: Users must create an account and log in to access the learning content. This ensures that access to the educational materials is restricted to authorized users. Course management: Instructors can create courses, add learning materials, and assign assessments. They can also manage learner enrollment and track learner progress. Learning material management: Instructors can add and organize learning materials such as text, images, videos, and audio files. They can also add learnings and other interactive elements to engage learners. Assessment management: Instructors can create and manage assessments such as learnings, exams, and assignments. They can alsotrack learner performance and provide feedback on assessments. Reporting and analytics: An LMS typically provide tools for tracking learner progress andgenerating reports on learner activities and outcomes. This can help instructors and administrators to identify areas where learners are struggling and adjust their course materials and assessmentsaccordingly. An LMS is designed toenhance the learning experience, improve learning outcomes, and simplify the process of managing and delivering educational content and training programs. By providing a centralized platform formanaging and delivering educational materials, an LMS can help learners to engage with educational content more effectively and enable instructors to track learner progress and assess learning outcomes more efficient

Software Requirements

The following software is needed to launcha learning management system:

1. HTML: The Hypertext Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It is often assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documentsfrom a web server or from local storage and render the documentsinto multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for its appearance.

2. CSS: CSS is designed to enable the separation of content and presentation, including layout, colours, and fonts. This separation canimprove content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reducescomplexity and repetition in the structural content; and enable the .cssfile to be cached to improve the page load speed between the pages thatshare the file and its formatting.

3. JavaScript: JavaScript is a high-level,often just-in-time compiled language that conforms to the ECMAScript standard. It

   has dynamic typing, prototype- based object-orientation, and first- class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

4. Node.js: Node.js is a runtime environment for executing JavaScriptcode on the server side. To run a learning management system created with Node.js, you will need to install Node.js on your system. You can download the latest version of Node.js from the official website.
5. Database: A database is required to store LMS data, student data, and other relevant information. The learning management system can use any database that supports Node.js, such as MySQL, MongoDB, or PostgreSQL. You will need to install and configure the database on your system before you can start thelearning management system.
6. Web Server: To run the learning management system, you will need a web server that can serve the React front-end and the Node.js back-end. You can use any web server that supports Node.js, such as Nginx or Apache. You will need to install and configure the web server on your system to start the learning management system.
7. Code Editor: A code editor is requiredto modify and customize the learning management system code. You can use any code editor of your choice, such as Visual Studio Code, Sublime Text, or Atom.

Hardware Requirements

The processor is the brain of the computer, and it is responsible for executing instructions and performing calculations. A Learning management system requires a processor that can handle a large number of concurrent users and complex calculations. A multi-core processor with a clock speed of 2 GHz or higher is recommended. The

processor should be able to handle the load of the web server, database, and other applications running on the system. RAM (Random Access Memory) is a type of computer memory that is used to store data temporarily. The amount of RAM required for a learning management system depends on the number of concurrent users and the size of the learning. At least 4 GB of RAM isrecommended, but 8 GB or more is preferable for better performance. Storage is used to store data permanently. The amount of storage required for a learning management system depends on the number of learning and students, as well as the size of any mediafiles included in the learning. At least 50 GBof storage space is recommended, but more may be required for larger systems. A stable and fast internet connection is essential for a learning management system. The system should be able to handle a large number of concurrent connections and provide real-time feedback to students and instructors. The network should be capable of handling large amounts of data transfer between the server and clients. A minimum internet speed of 10 Mbps is recommended, but higher speeds may be necessary for larger systems. A high- resolution display is recommended for viewing and editing learnings. A resolution of 1080p or higher is recommended for optimal performance. A larger display may also be useful for multi-tasking, such as displaying learning results and editing learnings simultaneously. A keyboard and mouse are essential for creating and administering learnings. A touchscreen display may also beuseful for students taking learnings on tablets or smartphones. It is important to ensure that the input devices are comfortable and easy to use for

extended periods of time. If the learning management system is deployed on a server, it should meet the recommended hardware requirements for the number of concurrent users and the size of the learning. A dedicated server with a fast processor, a large amount of RAM, and plenty of storage space is recommended. The server should also be equipped with a stable and fast network connection and be capable of handling a large number of concurrentconnections.

Literature Survey

A. "Learning Management System among University Students: Does ItWork?" [2]
Many colleges across the world have used the Learning Management System (LMS) to facilitate communication betweenstudents and professors outside of the conventional classroom setting.It is a setting with digital software that is intended to offer learning materials and information to students as well as manage user learning interventions. It is essential to recognize student inputas LMS users since the LMSsystem has already been establishedand is now required of allinstructors to utilize in their regularlectures. Previous research has revealed a range of results on the influence of LMS use in higher

learning environments at several universities across the world. This paper will offer numerous perspectives into the LMS phenomena as a result.

B. "The Effectiveness of Using LMS inWeb Based Teaching of programming Language" [1]
This essay discusses pilot research that was conducted at the Near East University in the fall of 2004–2005utilizing the collaborative editor GREW tool and the Moodle LMS. 36 students attending the Java and Pascal programming courses have tested the system. The pilot study's findings demonstrated that adding a collaborative learning tool can increase the effectiveness of a learning management system. Our findings also demonstrate that utilizing a collaborative tool and an LMS system, programming languages like Java and Pascal may be effectively thought in a web- based setting.

C. "LMS success: An investigationamong university students" [3] Demand for integrating new technology into educational processes has grown over the past few years. As a web-based educational technology, the learning management system (LMS) helps instructors meet their pedagogical objectives, organize course materials, and support students. Aiming to betterunderstand the variables that affect LMS performance, this study looks at them. Studying the connections between students' results (perceived usefulness), informationquality, system quality, andpreparation for online learning through system usage and user satisfaction led to the development of a research model. Students fromMalaysia's Limkokwing Universityof Creative Technology who were in their first year of college served as the respondents for this study. The sample for this study was determined by the number of students in each faculty. Surveysare used to collect the quantitative data.

D. "A Study of Application of LMS MOODLE in Communication of Information - A Literature Survey"[4]
In smart classrooms, an eLearning platform is frequently employed since it enables the quickest,

most economical, and consistent communication between teachers and students. In the conventional classroom, information is taught using tools like presentation software and PowerPoints, but these tools are static and ineffective in teaching, and communicating with them also doesn't improve

learning among the students (Ebardo & Valderrama, 2009). However, contemporary e-learning platforms and learning management systems (LMS) are dynamic and feature high-qualityinstructional materials, which maximize the effectiveness of learning and communication. In thecurrent study, the researcher has studied research papers anddiscovered that MOODLE provides communications features that are the most useful for disseminating knowledge and are popular in the distance learning.

Conclusion

The benefits of an LMS include increased accessibility, flexibility, and convenience for learners, as well as the ability for instructors to track learner progress, provide feedback, and improve course content over time. Additionally, LMS platforms can be used to facilitate communication and collaboration among learners and instructors, and to support a range of learning modalities, such as blended and online learning. However, it is important to note that the success of an LMSdepends on its implementation and ongoing maintenance. Proper training and support forinstructors and learners are essential, as well as the regular evaluation of the system's effectiveness and usability. In conclusion, learning management systems have the potential to significantly enhance the teaching and learning experience, but they require careful planning, implementation, and ongoing maintenance to ensure their success.

A learning management system (LMS) project requires a systematic and well- planned approach to be successful. It involves identifying the needs of the organization or educational institution, selecting the appropriate LMS software, customizing the system to meet the specific requirements, andintegrating it with other software tools and systems. The success of an LMS project depends on several factors, including effective project management, stakeholder involvement, comprehensive training, and ongoing maintenance and support. The project team must also consider the user experience and accessibility of the system to ensure that it is easy to use and navigate for both instructors and learners. A well- implemented LMS project can provide numerous benefits, such as increased access to learning resources, improved student engagement and retention, streamlined course administration, and enhanced assessment and evaluation. It can also facilitate communication and collaboration among learners and instructors, and support a range of learning modalities, such as blended and online learning. In summary, an LMS project can be a valuable investment for organizations and educational institutions seeking to improve the delivery and management of their learning programs. However, it requires careful planning, effective project management, and ongoing maintenance and support to ensure its success.

References

1. 'Learning Management System among University Students: Does It Work?' January 2013 International Journal of e-Education e-Business e-Management and e-Learning , Nor Azura Adzharuddin

2. 'The Effectiveness of Using LMS inWeb Based Teaching of programming Language' Nadire Cavus , Huseyin Uzunboylu , Dogan Ibrahim, 3rd International Symposium and Education on Electrical, Electronic, andComputer Engineering (ISEECE 2006), 23-25 November, 2006, NearEast University, Lefkoşa, Cyprus.

3. 'LMS success: An investigation among university students' Seyed Mohammadbagher Jafari; Suha Fouad Salem; Mohaddece Sadat Moaddab; Sharif Omar Salem , 2015 IEEE Conference on e-Learning, e- Management and e-Services (IC3e)

4. Baig Muntajeeb Ali, 'A Study of Application of LMS MOODLE in Communication of Information - ALiterature Survey' 28 August 2020https://papers.ssrn.com/sol3/papers .cfm?abstract_id=365