

**LEARNIT: A SUPPLEMENTAL LEARNING RESOURCE MANAGEMENT
SYSTEM FOR SUSTAINABLE LEARNING**

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APPROVAL SHEET

DEDICATION

This study is dedicated to our beloved family, who believed that we would overcome the obstacles we encountered. Who have been our inspiration that gave us constant support and have been the pillars of our strength when giving up crosses our minds.

To our adviser who guided and believed that time will not be a hindrance in finishing the research promptly and on helping us to make our research better. Your unwavering support and feedback have pushed us for excellence and success of this work.

To the panelists who gave us bright ideas to build this project and also, they are the one who believes in us that we can finish this work by using our knowledge and skills that also came from them.

And lastly, we deeply dedicate this to God Almighty who guided us throughout this journey, we are deeply thankful for the strength, blessings and unending spiritual support. All of these are offered to you.

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- **The Researchers**

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ABSTRACT

This research presents a Learning Management System it developed to sustain the learning by combining the modern technology into the educational procedure. The Learning Management system aims to improve the learning engagement and the educational outcomes of every student by providing a user-friendly web-based platform that will track the learning materials that will be assigned by the professor. The system has a dashboard for both students and professors to access the class materials, quizzes and assignment and to progress tracking. It includes real-time monitoring of student reading progress, also communication tools and personalized learning paths. The system ensured that the students could review and further understand each topic before the professor's instruction. The researchers used Waterfall Model to create and plan the system. The Learning Management System is more efficient and effective learning. It was developed using XAMPP, MySQL, PHP, HTML, CSS, JavaScript and Bootstrap it designed to be more friendly-user and maintainable. The system was evaluated to test its effectiveness through its functional suitability and maintainability and testing to know what to improve. The system has the potential to enhance communication between the professor and the students and it contributes to a more suitable educational framework. This research emphasized the significance of advance technology to support continues learning and improve educational performance. The Learning Management System represents the importance of advance resource management, offering an expandable solution to align the needs of the students and educators.

Keywords: Supplemental Learning, Sustainable Learning, Resource Management System, Educational Technology, Web-Based System, Student Engagement, Progress Tracking.

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Chapter 1

PROBLEM AND ITS SETTING

Background of the Study

Education is important to the students because it prepares them for the social responsibilities they will have in the future. Universities or institutions aim to offer the kinds of quality that best suits the requirements of both learners and society. Nowadays, education in the country has different aspects in which the students should learn in order to adapt to the society. Continuous learning also helps students to keep pursuing their personal and professional development goals. Professors and students should have a good relationship inside the university so that teaching and learning can be very easy to both students and professors. According to the quote “No matter where you are in your college journey, fostering strong professor and student relationships is important for your future” – (Ben Kissam) 2023. Many students end up with professors as lifelong mentors and support. In order to have a good relationship between professors and students, they should have a good communication when it comes to the teaching-learning process. Giving learning materials to the students ahead of time can be one of the important duties of professors to communicate to their students. Learning materials are important because they can significantly increase learners’ achievement by supporting learning.

Having a learning resource management system is beneficial to the students. It provides an important learning opportunity to support the educational learning programs of the students (CHRISFRUSA, 2023). Implementing such system can be a big contribution to the field of education. By offering freely accessible learning resources, the learning resource management system might help in improving the educational process. A

learning resource management system, which systematically organizes a learning resource, can maximize its effectiveness through management and utilizing it to the greatest capacity.

In the present condition of education, learning materials are given to the students but professors have a little hint if the students are reading the materials that are given to them. It is important for the professors to know if the students are studying and reading the materials that are assigned to them. By giving the learning materials ahead of time, it can help students to have an advance understanding of the topic that will be taught to them. Also, if professors give the learning materials to the students ahead of time, it will be easier for them to teach the lesson since the students already have an idea about what the lesson is.

Due to technological improvements, the educational landscape has undergone considerable changes in the digital age. Technology's integration into education has transformed teaching techniques. By developing a web-based system Learning Resource Management System for Sustainable Learning, reviewing and advance reading of lessons and also, tracking the student's progress of reading the learning materials will be simplified. Teachers would be able to check if the students have already read the materials that were given to them. Also, the students can read the learning materials that will be taught to them in advance, communication has been improved, relationship between the professor and students are better and educational outcomes are generally enhanced.

The researchers developed a Supplemental Learning Resource Management System for Sustainable Learning which seeks to satisfy the changing needs of students, teachers, and the needs of educational institutions or universities.

The system is a comprehensive and user-friendly system to handle and monitor student's reading progress effectively. Moreover, the system is a web-based system which can be used by schools or universities anytime and anywhere. The system will be used to add the learning materials that the students need to learn.

Objectives of the Study

The objective of the study is to create and develop a web-based learning resource management system, where the professors can view the reading and learning progress of the students. And the students can read and review the learning materials ahead of time.

Specifically, the study aims to:

1. Design a web-based learning resource management system with the following features:
 - a. Student and teacher's dashboard where students and teachers can see the class tab, quiz tab, assignment tab, student's reading progress, chat, and profile.
 - b. A list of classes which the teachers created, and the students joined.
 - c. A tab for uploaded learning resource material.
 - d. A quiz that can be unlocked or taken by the students after reading the learning resource material.
 - e. Read and track the student's reading progress for each learning materials.
 - f. Read and track the student's reading status.
 - g. Chat interaction between students and teachers.
 - h. Manage the student and teachers' account by the administrator.

2. Create a “A Supplemental Learning Resource Management System for Sustainable Learning” using the following tools:
 - Xampp
 - PHP
 - Mysql
 - HTML
 - CSS
 - Java Script
 - Bootstrap
3. Test and improve the system’s features, maintainability, and functional suitability.
4. Evaluate the level of acceptability of the system using ISO 25010 evaluation instruments and Quality Software Models.

Scope and Limitations of the Study

The study focused on implementing a web-based learning resource management system. The system enables specific users, which are the faculty, professors, or teachers, and the students, which gives the system access to a dashboard with information such as the class section, class resources, assignments, quizzes, and student's progress. The system can be used by students and teachers at any school or university.

The system consists of three sides, which are the admin side, student side and the teacher side. Each side has a sign-in or sign-up page, class tab, quiz tab, assignment tab, progress tab, chat section, and profile tab.

On the admin side, the admin can manage the accounts of both students and teachers. Once the teacher or student finishes signing up in the system, approval from the admin is needed so that they will have access to their account. Also, the admin will have lists of all teachers and students who have an account already. Moreover, the admin can delete any user in the system.

On the student's side, the class tab consists of a class course or subject for which students can join new classes with a class code. Also, in the class tab, when a student clicks a specific class, the system will show the class resources, quizzes, and assignments. When a student clicks on the class resources, the system will show the reading materials and the progress of the student's reading at the bottom. Also, each reading material or resource has a reading time so that the teachers will be able to know how long the students read the module. The quiz part inside the class will only be unlocked if the students have already finished reading

the module. In the progress tab, students can view their reading progress history, including their reading time.

On the teacher's side, the class tab is where the teachers will create a class or subject, and teachers will add the reading materials to this tab. If the professor clicks on a specific class, the system will show the student's reading and learning progress and the reading time of each reading material. The teachers will upload and check the quizzes and assignments in the quiz and assignment tabs. The system will have a chat section where a student and a teacher can only interact with each other.

The researchers used operating systems like Windows 7 to 10, or a much higher version. The system development considered at least 4 GB of RAM and at least Intel Core i3 processors. Moreover, the user should have an internet connection, maybe a wireless internet connection or preferably a built-in Ethernet, to connect to the local network and access the website. The system was developed using web development tools such as XAMPP, PHP, MySQL, HTML, CSS, Java Script, and Bootstrap.

The system has been evaluated by 30 purposely selected respondents composed of (10) IT students, (5) college students in any course, (5) senior high school, (5) junior high school, and (5) teachers. The ISO 25010 Software Quality Model is the tool that was used to examine the level of acceptability of the system.

Chapter 2

CONCEPTUAL FRAMEWORK

The review of relevant studies and literature that forms the study's conceptual foundation is presented in this chapter. The operational definition of terms and the conceptual model for the investigation are also included.

Review of Related Literature

This section includes significant studies and articles that supported the researchers in conceptualizing the subject of their study. It includes discussion on learning resource management system, web-based system, and the various technology tools, among others.

Learning Resource Management System

Libraries, books, electronic resources, learning resource centers and laboratories, library consortia and interlibrary loan agreements, computers, internet access, research databases, and other comparable tools and resources are all included in a learning resource system. These materials also support and improve a school's educational program. No matter where they are located or how they are delivered, the learning resource system's resources must be easily and quickly accessible to instructors and students both during and after school hours.

According to Briz-Ponce and Helfin (2017), learning and teaching have inevitably evolved from a traditional, classroom-based, textbook-centered, group-learning oriented setting to a more flexible, anywhere-anytime-based, e-learning resource-oriented

personalized learning process that takes advantage of mobile technology's convenience and omnipresence.

As stated by Baturay, Brahimi and Sarirete, (2015) many universities and educational institutions worldwide are focusing more and more on online learning to embrace this change. Online courses and programs, such as the so-called massive online open courses (MOOCs), are growing rapidly; some of which are provided free to the general public

According to Hongzi Mao (2016), resource management problems in systems and networking often manifest as difficult online decision-making tasks where appropriate solutions depend on understanding the workload and environment. Inspired by recent advances in deep reinforcement learning for AI problems, building systems that learn to manage resources directly from experience are considered. We present DeepRM, an example solution that translates the problem of packing tasks with multiple resource demands into a learning problem. Initial results showed that DeepRM performs comparably to state-of-the-art heuristics, adapts to different conditions, converges quickly, and learns strategies that are sensible in hindsight.

Dahlstrom and Bichsel (2014) found that 72% of the students they studied preferred a mixed learning environment that combined online and in-person education. According to their findings, during the last decade, students have used mixed learning settings more frequently, correlating with an increase in LMS use.

DeVine (2013) stated that, there are a lot of advantages to online learning, like the capacity to continue communicating with kids at a higher level, adaptability in the capacity

of educators to serve as mentors and coaches rather than just a director, as well as a stronger feeling of community, all of which could encourage students to be more successful in an online learning setting as opposed to a real one with rigid scheduling times.

Online learning, defined as an online classroom where students choose their own pace of instruction and possess the freedom to use their programs whenever it's convenient to work on matters like obligations to one's family or other jobs, has made it possible for students to learn whenever and wherever they want (ITT Technical Institute, 2007). As a result, online learning has become an essential component of the educational process.

According to Bersin, Howard, and O'Leonard (2008), learning management systems (LMS) are a practical and efficient way for educational institutions to run their business. A learning management system (LMS) is a complex web-based application that provides features and functions such communication services, content distribution, learning, and evaluation.

Fetaji (2007) mentioned that e-learning platform called an LMS uses extensive strategic planning to oversee training initiatives within a company to enable online education in a virtual classroom, giving the organization control over students and the kinds of tasks events as well as essential administrative tasks.

Saudi Arabia has been slow to adopt online learning, according to AlNajdi (2014). higher education since the foundation of the Saudi higher education system has been traditional teaching aids. As such, the potential of online education to support instruction and learning has not been fully realized. LMS, on the other hand, offers pedagogy—which combines in-person and virtual instruction—many advantages. Since the beginning, Saudi

universities and colleges have also been introducing and modifying LMS programs to offer additional chances for students to learn online, such as reaching students who are situated in rural or remote parts of the nation or enabling students with specific disabilities to access education through the Internet.

Baepler and Murdoch (2010) discovered that universities were using Learning management systems have been creating the required technological instruments that would enable them to spend money on infrastructure and human resources. Nevertheless, the pupil Neither student participation in LMS contexts nor student performance with the material investigated in connection to students' adaption within such educational settings.

A study conducted by Brady (2010) on the effectiveness of an education-based social networking sites or virtual learning environments in education supported the idea of a great potential of these online educational platforms as a supplementary tool for a face-to-face class.

A web server-based program, the Learning Management System (LMS) is defined by Alturki and Aldraiweesh (2021) and Raza et al. (2021), without respect to time or location constraints, control the academic or non-academic teaching and learning process in a program using a personal local computer or the cloud. The LMS can be used as an application or as an online browser because the majority of its content is freely accessible. Many Learning Management Systems (LMS) that Capterra has created for use by corporate and academic users are available today, and their adoption has led to a rise in student enrollment and the adoption of innovative ways of teaching. As an example, during the most recent worldwide lockdown brought on by the COVID-19 pandemic, these virtual

learning environments assisted and supported instructors and students enrolled in the online education and training program.

An LMS comparison based on the software usability analysis was presented by Krалева et al. (2019). Three tools comprise this assessment method: one for learning ability, one for communication, and one for productivity. The LMS for businesses and academia uses these comparing criteria.

Alva et al. (2021) evaluated Moodle, Chamilo, and Google Classroom. Because Moodle is a popular platform, it serves as the base for the comparison. Four metrics are compared, beginning with earnings personalisation. The second step is user support. The third category is student tools. And finally, collaborative learning. According to the criteria established by Alva et al. (2021), Moodle is the best of the three options under consideration.

Momani (2010) provided another comparison of Moodle with Blackboard. Testing was conducted on 52 aspects, which were split into six indicators: the first being pedagogical. The second component is the learning environment. The third category is teaching tools. The fourth step is course design. Fifth, consider management tools. Sixth, the technical specifications for the software.

Kundi, Nawaz, & Khan, Kulshrestha, Kant. Lopes, A. (2014) discussed some advantages of utilizing an LMS which include: (i) centralizing e-learning resources and material; (ii) offering a prompt and efficient unrestricted access to course materials; (iii) simple tracking of students' achievement; (iv) lower costs associated with learning and development procedures; (v) shorter time required for learning and development; (vi) It

allows for the quick and easy expansion, updating, and modification of online courses; (vii) and certain learning management system (LMS) solutions come equipped with the ability to include social learning into the curriculum.

Kraleev, and Kostadinova, D. (2019) pointed out that open-source or commercial learning management system (LMS) provides a dependable, adaptable, and secure online learning environment. Its concept stems directly from the e-learning paradigm, which promotes interactive interactions between professors and students to aid in the reinforcement learning process. There are three types of learning methods: mobile, remote, and e-learning. Each of these types administers and oversees the learning process through the use of Internet resources. Learning should take place in real time, whether via desktop, mobile, or cloud-based apps (Software-as-a-Service), allowing students from all over the world to connect with teachers.

Sheeba, T. and Krishnan, R. (2019) stated that learning management systems (LMSs) integrate machine learning concepts, automated identification, social networking, and user preference prediction to automatically alter their functionality based on customer requirements.

Bharat, and Wang, Y. (2019) mentioned that every LMS has unique components, features, and modules that can be customized. Course management, user management, communication tools, online exams, feedback administration, student assessment, machine learning, and security are a few examples of these types of models.

Nadirah N., Kasim M., and Khaled F. (2016) The public today has access to a variety of commercial and free-source learning management systems (LMS), each with

advantages and disadvantages related to the online learning process. This is why it is critical that potential customers receive excellent guidance to help them make the right selection. It is crucial to select an LMS wisely because some systems offer confusing user interfaces, hidden fees, ambiguous shared features, unsupported platforms, and so on.

As a result, a comparison analysis of the most common ones employing key assessment criteria is required. Furthermore, LMS systems must be compared in order to choose the best one and comprehend its advantages and disadvantages.

Dobre (2015) divided the current LMSs into four groups: cloud-based, hybrid, open source, and proprietary. According to this report, adopting Moodle will boost the popularity of open-source learning management systems by 20.1%, whilst using blackboard will only raise it by 13.1%. Additionally, this study demonstrated that cloud-based learning management systems (LMS) have emerged as a viable option, particularly for businesses looking to abandon the hassle of setting up, maintaining, and safeguarding these services internally.

Poulovaa, Simonovaa, and Manenovab (2015) examined four learning management systems (LMSs): Claroline, Moodle, Blackboard, and Enterprise Knowledge PlatformTM. Evaluation criteria included cost, communication, course administration, blogs, surveys, workshops, and virtual classrooms, among others. The study's findings demonstrated that while Blackboard and EKP are commercial products with fees based on the number of users and the features necessary, Claroline and Moodle are both freely available. Furthermore, this study shows that 80% of the built-in tools in Blackboard and EKP are the same, which is more than in Claroline, which has fewer built-in tools. In all four LMSs, communication tools were present.

Kraleva, Sabani, and Kralev (2019) provided a comparison study of 36 LMS utilizing learning skills tools with the following features: productivity tools (uploading/downloading, security, Web-based technology, analysis of students' achievement, chat, forums, and mail messages), communication tools (chat, mail messages, and forums), and SCORM compliant material, assignments, gamification, and evaluation. The research found that every LMS under examination allows for the usage of multimedia components, the construction and modification of lectures, and the production of exercises and course assignments.

According to Saule Kumargazhanova (2023) as there are many pre-made LMS solutions accessible, it may be difficult to construct LMS systems that meet all user requirements while remaining flexible. It is challenging to consider every need for the system's functionality when developing such systems. This paper suggests a method for creating a module-based, service-oriented learning management system. In addition, the user can create the required functionality based on services, processes, and objects, depending on the functionality. A finite set of modules is formed via a cluster technique.

Alturki and Aldraiweesh (2021) and Raza et al. (2021) pointed out that the program known as the Learning Management System (LMS) is built on a web server. Using a personal local computer or the cloud to handle teaching and learning procedures in a program, whether academic or otherwise, without time constraints or geographical location. Given that the majority of the LMS can be used as an online browser or as an application, users have unrestricted access. These days, there are a lot of LMS created by Capterra for usage by academic and industrial users, which have expanded the student body and made use of new learning modalities. As an example, these online learning

environments helped and supported educators and learners in the online instruction and training program amid the most recent global lockdown as a result of the COVID-19 pandemic.

An LMS comparison based on the software usability analysis was presented by Kraleva et al. (2019). Three tools comprise this assessment method: one for learning ability, one for communication, and one for productivity. The LMS for businesses and academia uses these comparing criteria.

Krlev, and Kostadinova, (2019) mentioned that an open-source or commercial learning management system (LMS) offers a flexible, dependable, and secure online learning environment. Its idea originated straight from the e-learning paradigm, which facilitates interactive connections between teachers and students to support reinforcement learning. There are three different kinds of learning methods: mobile learning, remote learning, and e-learning. Each of these kinds administers and manages the instructional process with the use of Internet resources. Through desktop, mobile, or cloud-based applications (software-as-a-service), learning should take place in real time, allowing students from all over the world to interact with teachers.

Sheeba, and Krishnan (2019) explained that certain learning management systems (LMSs) employ machine learning principles, automated identification, social media, and user preference prediction to automatically adjust according to customer requirements and their functionalities.

Nadirah, Kasim, and Khalid, F. (2016) stated that there are currently a large number of commercial and open-source learning management systems (LMS) accessible to the

public; each offers advantages and disadvantages related to the online learning process. This is why it's critical that a potential consumer has solid guidance to help them make the right choice. It's important to choose your LMS wisely because some systems offer confusing user interfaces, hidden fees, ambiguous shared features, unsupported platforms, etc. Due to this, a comparative analysis of the common ones employing significant assessment criteria is required. Additionally, it's critical to compare LMS programs in order to choose the best one and learn about their advantages and disadvantages.

Beach and McConnel's (2019) study on employing an eye-tracking technique for evaluating teacher learning provided a few fascinating insights into the sort of information that may be collected through this method of assessment, such as behavior trends and decision-making methods. It can sometimes be useful to compare research designs from different studies to see whether there are any factors that influence the selection of research method, such as place of origin.

Tisovic (2011), carried out a study on Filipino students' academic performance and their use of the learning management system. Moreover, LMS expands a student's learning environment's scope. This gives teachers and students a simple, easily accessible classroom. It minimizes administrative overhead by automating the learning course, facilitating training transfers, managing learners, and monitoring their progress during training activities.

Broadbent (2016) stated that a lot of colleges and universities are using these LMSs. Nevertheless, studies that use LMS student activity data frequently miss important factors that affect student obligation but are not extracted from the LMS.

According to Coleman and Mitshazi (2017), there was a high rate of LMS usage and, generally, most lecturers thought it was a useful teaching tool. This was demonstrated by the lecturers' frequent use of the system and their intention to stick with it despite its shortcomings.

Delloso et al. (2012) defined Moodle, also known as the Modular Object-Oriented Dynamic Learning Environment, is a growing system for information technology education. This learning management system is web-based. A number of early tests were carried out to improve the researchers' knowledge of Moodle and deliver the learning to the end users (the university). A learning management system consists of three components: a server, web hosting, and the Moodle software. Students assessed the LMS as generally good and acceptable in four categories: system, technical assistance, tools, functions, and capacities.

Nabeel (2015) showed that the perceived usefulness of an LMS is influenced by the e-learning course but is unaffected by the academic year's performance, or GPA. Using the technology acceptance model, the researchers were able to ascertain how the pupils felt about LMS to see if it was beneficial or not. They employed 207 University of Jordan students as their audience. It was suggested that University of Jordan students have the qualifications and expertise to use LMS.

Yaser (2017) said the study's goal is to create a blueprint for the English language course E-Learning management system for the students from the previous year, assess how using the E-Learning management system affected the students' understanding of the

English language, and categorize the impact of the E-Learning management system on students' motivation from the previous year.

Firat (2016) has assessed how an LMS affects a student's learning using learning analytics academic grades, which is a method of data collection. According to the results, students use the LMS more at the start of the course. Using Pearson correlation analysis, the GPA and conduct of the students on LMS did not show any statistically meaningful correlation. On the other hand, if an LMS contains attributes like efficacy, interaction, reinforcement, aesthetically pleasing design, support for social media, and accessibility, the majority of pupils concurred that LMS has helped them attain greater academic success.

Ümmühan's (2019) study on student's academic performance and grades in an online course named "Computer Literacy" but not "Information Literacy" revealed it may be significantly impacted by their LMS involvement levels. Instructors are able to assess the demands of their pupils and give assistance with learning by assessing their degree of involvement. As a result, avoid disagreements inside the LMS or online learning environment. Achievement in school and utilization of learning management systems among Filipino students.

The research of Ivana et al. (2012), involving 169 participants revealed information from Serbia's biggest university. Using a technique known as "stepwise linear regression," they were able to ascertain which had a greater favorable impact on a student's academic performance. Additionally, it said that the notion of ease of use by students can have a considerable impact on the positive effect on their accomplishment, as the final outcome is dependent on the perception of the students.

Chaw (2018) emphasized that maintain their learning, LMS can provide students with resources in a variety of formats, including videos, quizzes, and forum discussions. However, using an LMS does not guarantee that learning has taken place. Even if it is clearly successful, whether using an LMS can help the ability of students to learn more effectively continues to be an intriguing problem for course providers, learners, and LMS vendors. As a result, the updated DeLone and McLean information system success model was used in this study to determine whether the quality of the LMS system, the services it offers, and the information it contains influences how users use the system, how satisfied they are with it, and, ultimately, how effective their learning is. A questionnaire survey of 123 college students engaged in a blended learning program was done. The data revealed that there was a distinct association between system use, service, and system quality, but not information quality. System utilization was found to be substantially linked with learning efficacy.

As stated by Alireza, Fatemeh, and Shában (2012), the development of advanced technology has committed to offering equal educational possibilities everywhere for everyone, as well as various courses on a constant basis. In reality, without taking into account the primary components of learning, the use of the most powerful and cutting-edge technology is pointless and will serve more as an advertisement than an educational tool.

Wang & Chen (2009) mentioned that it is critical to assess the effects of these systems on certain groups, such as language learners. When considering a learning management system for online education, it is critical to consider how well it matches with communication language development theories, as well as its functionalities and prospects.

Wagner, Hassanein and Head (2008) stated that although student concerns are essential teacher issues should not be overlooked, as educators play a critical role in guiding students' educational experiences. Educators may approach e-learning in a variety of ways. Some courses are entirely online, whereas others combine in-person and online components. Educators may feel compelled to adopt a learning management system, or they may want to reach a larger number of learners. Some educators are interested in technology enhanced learning.

Vord and Pogue's (2012) study revealed that when face to face teaching takes longer per student; certain components of online teaching take significantly more time per student than in a face-to-face classroom. Educators value the tools provided by the learning management system and derive advantages from how they communicate with it. They value the system's ability to send information and facilitate effective communication.

Lonn and Teasley (2007) stated that educator assessment of the value of learning management systems to education and instruction was very numerous, implying, along with student perceptions, that there can be a substantial variety in the content and experience supplied on an educator-by educator approach.

Web-Based System

A web-based application runs within a web browser. It is compatible with any platform as long as you have a browser and an internet connection. It is also referred to as browser-based applications for this reason. For example, one can use his/her PC's web browser to access Facebook. One can also access Facebook through his/her smartphone's

browser. The web-based application can be compared to software that is an enhanced version of a website. As one is aware, websites frequently provide information to their viewers. One can view information and use a website with little or no interaction.

On the other hand, an interactive user interface is provided by web-based applications. The sophisticated parameters are adjustable to one's preference. Moreover, web-based apps only load once. This means that if one wants to view other pages while using a web-based application, it will not refresh itself. You will not need to refresh the page to get to any other pages when one accesses them.

Classroom mode in relation to personal interaction and preserve the distance between teachers and students. Within this framework, information technology offers ever-increasing adaptability and accessibility to culture, education, and career and personal growth, which helps to form educational system.

Development tools

Xampp

According to EDUCBA, XAMPP is a cross-platform web server that is free and open-source. Cross-Platform, Apache, MySQL, PHP, and Perl are collectively referred to as XAMPP. A well-liked cross-platform web server called XAMPP enables developers to write and test their programs on a local web server. The Apache Friends developed it, and anyone can edit or change the native source code. Among other computer languages, it comes with Maria DB, Apache HTTP Server, and interpreters for PHP and Perl. Because

of XAMPP's ease of deployment, developers may quickly and easily set up a WAMP or LAMP stack on an operating system with the added bonus of being able to load popular add-on applications like WordPress and Joomla. Web designers and programmers could test their work on their own computers without the need for an Internet connection thanks to XAMPP, which was designed to be used as a development tool. To make this as simple as possible, many important security features are by default disabled. The Internet's web pages are served via XAMPP. Along with other databases, it can be used to build and modify databases in Maria DB and SQLite. An FTP client can connect to a local host and treat it as if it were a distant host once XAMPP is installed. Use a program like FileZilla to install content management systems like Joomla or WordPress. Additionally, an HTML editor can be used to establish an FTP connection to a local server.

PHP

According to Wikipedia, Personal Homepage was the earliest definition of the acronym PHP. However, it is now an acronym for hypertext preprocessor. On a web server, PHP code is often interpreted by a PHP interpreter that is implemented as a module, daemon, or Common Gateway Interface (CGI) executable. Any sort of data, such as generated HTML or binary image data, could result from PHP code being evaluated and executed on a web server, making up all or part of an HTTP response. A wide range of online template systems, web content management systems, and web frameworks can be used to organize or facilitate the construction of that response. PHP is also handy for non-web programming activities such as controlling robotic drones and creating standalone graphical programs. PHP code can be executed directly from the command line. The Zend Engine-based default PHP interpreter is free software released under the PHP

License. Because PHP has been extensively used, it is compatible with the vast majority of web servers running a range of platforms and operating systems. Without a defined specification or standard until 2014, the PHP language evolved, with the first implementation serving as the de facto standard against which subsequent implementations attempted to compare. Since 2014, there have been efforts to standardize the PHP specification.

MySQL

According to Talend, One of the most well-known technologies in the current big data ecosystem is MySQL. Given that MySQL is sometimes referred to as the most popular database and is currently being used widely and successfully across all industries, it is obvious that anyone working with enterprise data or general IT should at the very least strive to become something familiar with MySQL.

Even those who are unfamiliar with relational systems can quickly construct robust, secure, and quick data storage systems using MySQL. The programmatic interfaces and syntax of MySQL serve as excellent entry points into the world of other well-known query languages and structured data storage.

MySQL, an Oracle relational database management system (RDBMS), is built on SQL technology. A database is a collection of organized data. Anything from a simple grocery list to an image gallery or a location to store large amounts of data on a corporate network might be considered a relational database. An RDBMS is a collection of software tools used for setting up, maintaining, and querying such a database. MySQL is a key component of many of the most widely used software stacks for creating and sustaining

anything from robust, data-driven B2B services to customer-facing web apps. Due to MySQL's open-source nature, dependability, and broad feature set, as well as continued development and support from Oracle, it is used as the backend by a number of key websites, including Facebook, Flickr, Twitter, Wikipedia, and YouTube.

HTML

According to TheServerSide, HTML (Hypertext Markup Language) is a text-based language used to describe the organization of material in an HTML file. The markup on a webpage instructs a web browser how to display text, images, and other types of multimedia. The World Wide Web Consortium (W3C) has made HTML a formal guideline, and most popular web browsers, including those for desktop and mobile devices, generally follow this proposal. The most recent version of the specification is HTML5.

A text file marked as HTML should be interpreted as such by a computer and a web server since it follows specified syntax, file, and name conventions. A user can create and design a simple webpage and upload it to the internet by applying these HTML principles to a text file in almost any text editor. The inclusion of a document type declaration at the start of the text file is the most fundamental HTML convention. As the part that explicitly tells a computer that this file is an HTML file, it always comes first in the document. Typically, the document heading looks like this: `<!DOCTYPE html>` Always write it that way, without adding additional material or fragmenting it. A computer will not identify any material that comes before this declaration as HTML.

CSS

According to TechTerms.com, Using CSS, web designers may give a website a consistent appearance throughout. A style is defined only once in a CSS style sheet, as opposed to setting the appearance of each table and block of text in the HTML code of a webpage. It is possible to create and apply unique styles to tables, pictures, and text. Custom formatting for common HTML formatting tags, such `<h2>`, ``, and ``, can be defined in a CSS file. A defined style can be used by any page that links to the CSS file. CSS removes the formatting and content from a webpage to make it easier to change styles across several pages at once. For example, to change the body text size from 10 points to 12 points across dozens of distinct HTML pages, you just need to make one style alteration in the CSS file. The font size varies each time the style is applied to a page that makes use of that style sheet.

JavaScript

According to SimpliLearn, JavaScript can be used on the client side as well as the server side. While HTML and CSS languages are used to give structure and style to web pages, JavaScript is used to add interactive elements that engage users. Without JavaScript, 90% of Internet webpages would be static. JavaScript is a scripting language used to develop web pages. Developed in Netscape, JS allows developers to create a dynamic and interactive web page to interact with visitors and execute complex actions. It also enables users to load content into a document without reloading the entire page. Most websites use JavaScript for validation and to support external applications, including PDF documents, widgets, flash applications. Some of the world's largest tech companies use JavaScript to better the user experience. Robust online apps are developed using a variety of JavaScript

frameworks. Popular JavaScript front-end frameworks that help build web apps are React Native, React, Angular and Vue. Netflix and PayPal were developed with AngularJS JavaScript framework and Application Programming Interfaces (APIs). A very popular application of JavaScript is to create interactive presentations as websites. The RevealJs and BespokeJs libraries can be used to generate web-based slide decks using HTML. The RevealJs helps create interactive slide decks with transitions styles, themes, and slide backgrounds in all CSS color formats. The BespokeJs is a feature-heavy framework that includes features like scaling, animated bullet lists, syntax highlighting, etc. Even if a user is not fully conversant with a programming language, they can easily build presentations as websites using JavaScript

Bootstrap

According to F5 Studio, Initially developed by Twitter developers for internal usage, Bootstrap was eventually made available to the public and developed into a useful set of tools for creating user interfaces of any complexity. Web developers now use Bootstrap, an open-source, free HTML, CSS, and JS toolkit, to rapidly and efficiently generate flexible website layouts. Great bootstrap web design examples may be found on specialized websites like Award. There are numerous benefits to using Bootstrap while creating websites. Companies as a whole as well as freelance developers use the Bootstrap framework. Its primary use is in the creation of admin interfaces and front-end component websites. The most well-known of related systems is the Bootstrap framework. Bootstrap is really just a collection of CSS and JavaScript scripts. There are several classes and pre-made components that may be used for design layout when a Bootstrap web developer

connects these files to the page. They are quite useful in the development of contemporary websites with responsive web design.

Ajax

According to geeksforgeeks, AJAX stands for asynchronous javascript and XML the user to make a request to the server for the data without any reloading and without block, any other request also so provide a smooth performance to fetch the data to the server and show to the page.

JQuery

According to geeksforgeeks, this javascript library makes everything easy and provides a very effective method for doing something in the front end and gives many essential features like browser event handling, DOM animations, Ajax interactions, and cross-browser JavaScript development.

Evaluation Instrument

The evaluation instrument model categorizes the software for evaluation of its functional suitability, reliability, performance efficiency, usability, security, compatibility, maintainability, and portability.

ISO Software Quality Indicators

ISO 25010, titled “Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – System and software quality models”, is a software quality standard. It describes the models, consisting of characteristics and sub-

characteristics, for both software product quality, and software quality in use together with practical guidance on the use of the quality models.

ISO 25010 is software quality model includes:

- Functional Suitability – the characteristic allows to draw conclusions about how well software provides desired functions. It can be used for assessing, controlling and predicting the extent to which the software product (or parts of it) in question satisfies functional requirements.

Reliability - the reliability characteristic allows to draw conclusions about how well software maintains the level of system performance when used under specified conditions. It can be used for assessing, controlling and predicting the extent to which the software product (or parts of it) in question satisfies reliability requirements.

- Maintainability: The maintainability characteristic allows to draw conclusions about how well software can be maintained. It can be used for assessing, controlling and predicting the effort needed to modify the software product (or parts of it) in question.
- Security: This is the extent to which a product or technology protects data and other information from security vulnerabilities.
- Compatibility: is the amount to which a product, system, or component can interchange data, function as intended, and share the same hardware or software environment.

Related Studies

The following studies were found relevant to the present study:

In the study entitled “Online Learning Management System” Sai Karan Reddy Kankunta (2022) stated that websites for online learning have fundamentally changed how people learn and seek for courses. Both educators and learners can now look for and sign up for courses from the comfort of their own homes. An online learning platform can be used by the instructor or student to identify courses that fit their professional goals and areas of interest. Through the use of the internet, an Online Learning Management System may greatly enhance both the instructor's and student's course enrollment process. In recent years, finding and enrolling in a course has been easier, faster, and more accessible.

The availability of an extensive range of subject areas for the courses is one of the main advantages of enrolling in an online school. Simply checking in and looking through the course on the dashboard allows anyone interested in taking courses to sign up for a variety of courses. Aside from that, students can access their courses at any time by visiting the student homepage after logging into the web application. In a similar vein, online course enrollment tools could help teachers speed up the enrolling process. With only a few clicks, instructors may quickly create, modify, or disable their courses in the online application. Online learning management systems help them save time and effort as a result.

Participants in the proposed Online Learning Management System can register as both teachers and students. There are distinct duties allocated to instructors and students. A list of courses is displayed to the students, who is free to apply to those that interest or

align with their intended career path. In a similar vein, when students buy a course, teachers have the ability to add additional courses and monitor their earnings in the dashboard.

In the study entitled “Developing a learning management system using single page application architecture” by Ivan Leontev (2020), one of the things that has a significant influence on education, particularly through e-learning platforms, is the growth of the IT industry. The COVID-19 pandemic in 2020 made these systems even more crucial for the school sector. This thesis demonstrated the process of developing a single-page application in order to fulfill its objective of describing the development process of a learning management system platform. The study also attempted to investigate the MVC pattern and offer a set of ideas and recommendations for additional system enhancement. A working single-page application prototype that complied with all specifications established throughout the system's design phase was the tangible outcome of the thesis.

According to Roa's (2023) study, "Effectiveness Of Learning Management System In University Of Science And Technology Of Southern Philippines Cagayan De Oro And Villanueva Campuses: A Policy Recommendation," Learning Management Systems (LMS) are gaining traction in the Philippines as educational institutions and businesses seek flexible, accessible, and cost-effective training solutions. The Commission on Higher Education mandates the adoption of LMS in higher education institutions. This is based on CHED Memorandum Order No. 04, Series of 2020, which outlines the policies, standards, and guidelines for the establishment and operation of e-learning programs in HEIs. The government's push for digital education, combined with the increased acceptance of cloud-based programs, is propelling the country's Elearning growth. However, significant

difficulties remain to be addressed, particularly in terms of digital infrastructure, instruction for educators, and assistance. This study examined e-learning in higher education and motivation as variables that affect student learning. The study showed the importance of user-friendly LMS interfaces and technical support, and the crucial role of faculty members in supporting and enriching the learning experience through the LMS.

According to Almoslamani in his study entitled “Effectiveness of Student Engagement Using Learning Management System in the Blended Learning Environment at Management System in the Blended Learning Environment at Saudi Electronic University Saudi Electronic University (2018), higher education is increasingly employing learning management systems (LMS), however studies on how much involvement impacts the results for students remains in the beginning stages. The current study looked into the relationships between educational results and student engagement in a mixed learning environment at Saudi Electronic University. It evaluated student self-reported data from Elearning exercises to see whether gender contributes to commitment and product quality. The current investigation used an analytical approach to investigate a connection between students' overall GPA (grade point average) and what they thought was the hourly amount of time spent participating in LMS activities. Furthermore, the children's Commitment Questionnaire was used in this experiment to determine how engaged kids were with the internet.

The goal of the current study and the previously mentioned studies on learning resource management systems is similar: by using the system, which requires only registration in order to attend a class, users can save time and effort. The benefit of LearnIT: A Learning Resource Management System is that it can track students' progress in reading

the learning materials that the teachers assign. After reading, they must complete a quiz to enhance their review experience. This is a good way for a learning resource management system to make sure that students are reading the resources for their learning progress. They can also view the dashboard and other activities that are available to improve their learning experience.

Conceptual Method

Three system components, input, process, and output are part of the study's conceptual model. To accomplish the objectives of the study, certain systemic components are essential.

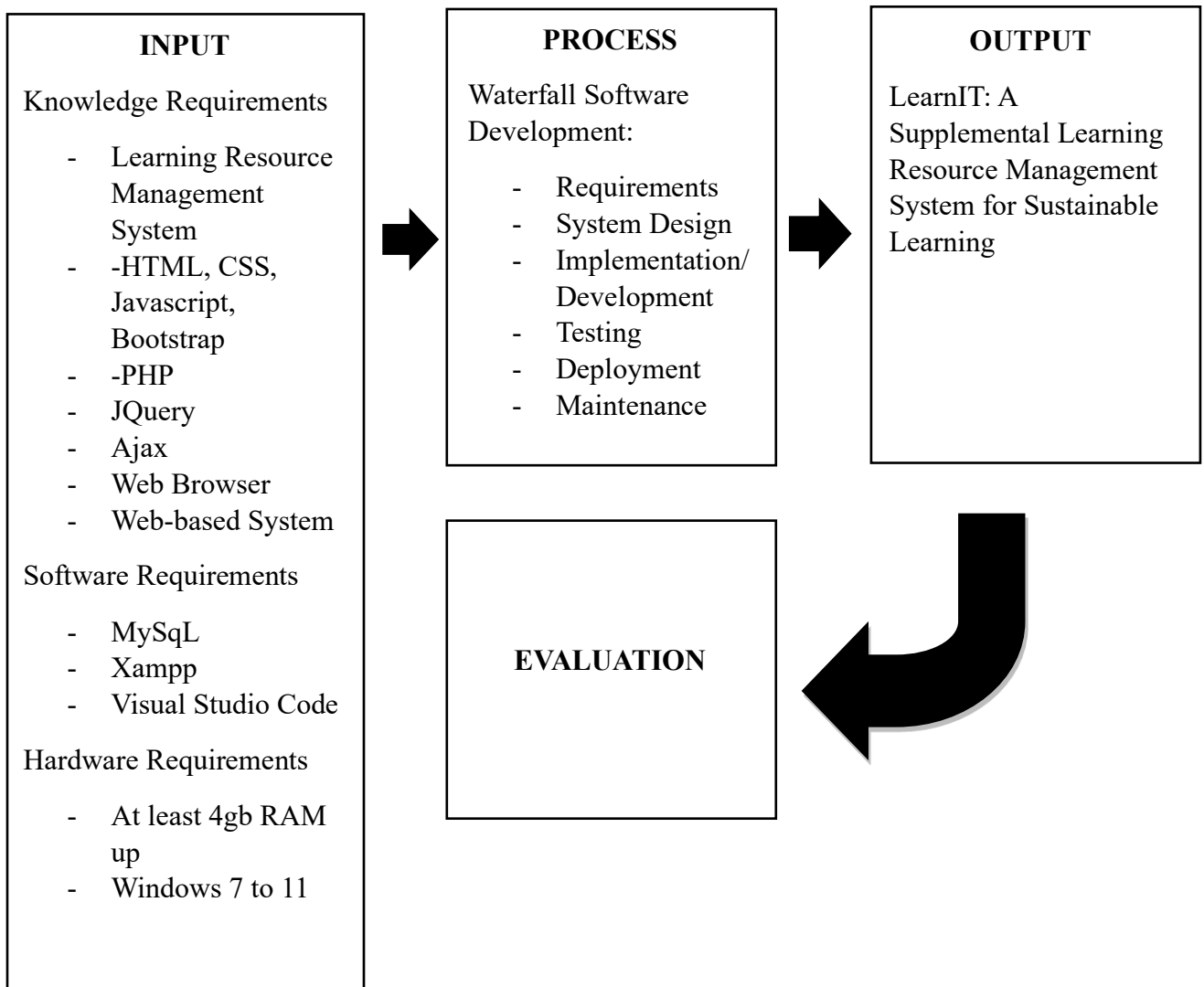


Figure 1. Input, process, Output of the System

Input

Knowledge requirements, software requirements, and hardware requirements are necessary for the study's input phase. The study includes both the web programming languages used to develop the system and the knowledge prerequisites needed to comprehend it. The system needs MySQL, Xampp, Visual Studio Code, and a web browser as its software components. The specifications of a computer required to access the system are known as the hardware requirements.

Process

The process phase outlines the system planning and data gathering, system design, system creation, and system testing components. System planning and data gathering is where we make our plan on how to start our system and gather crucial information. System design is where we make our layout for our system. System creation is the actual making of the system; this is the time we do the coding for our system. System testing is where we test our system to see if it is functioning as intended and if there are any errors or other things that need to be improved.

Output

The finished system is the output phase with the inputs and procedures. “LearnIT: A Learning Resource System for Sustainable Learning” which was developed by the researchers.

Operational Definition of Terms

The following terms are operationally defined for a better understanding of the study and to utilize the context of describing and discussing the research project.

Quiz - refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students.

Dashboard - dashboard is a tool for condensing different kinds of visual data. Typically, a dashboard's purpose is to present various, linked facts in an easy-to-understand style.

Professor - someone who teaches at a college or university. A professor is officially a teacher of the highest rank, above adjuncts and lecturers, but college students can call them all professors.

Class - a collection of classes or courses that a learner might take to learn a certain skill or gain knowledge on a certain subject.

LearnIT - A Supplemental Learning Resource Management System for Sustainable Learning.

Learning Resource Management – offers the means for DEP ED Regions, Divisions, and Cluster/School levels to have coordinated and integrated access to high-quality materials.

Xampp - Cross-Platform, Apache, MySQL, PHP, and Perl are the acronym's letters, with the Ps denoting PHP and Perl, respectively. It's an open-source online solutions kit that includes Apache modules, PHP, Perl, MariaDB, and delivery for a range of servers and command-line executables.

HTML - HyperText Markup Language (HTML) is a collection of markup symbols or codes applied to a file with the goal of displaying it online. The markup tells web browsers how to display text and images on a webpage.

Bootstrap - a way of installing software on a computer that uses a few simple commands to introduce the remainder of the application through an input device.

JQuery - is a feature-rich, compact, and quick JavaScript library. With an easy-to-use API that functions across multiple browsers, it simplifies tasks like event handling, animation, Ajax, and traversing and manipulating HTML documents.

IPO – (Input Process Output) is a visual tool used to describe a workflow, the flow of information, or activities within a system.

Chapter 3

METHODOLOGY

This chapter contains the research methodology with the following sections of project design, project structure and operation and testing procedure and evaluation procedure.

Project Design

The study developed a web-based Learning Resource Management System for Sustainable Learning to analyze the progress of the student on reading the modules uploaded by the teacher and monitor the scores the student took right after reading the sources uploaded by the teacher. The system is furnished for both students and professors to keep track of the student's academic performance.

In Figure 2, it starts from choosing the account type if the user is an admin, teacher or a student then it will proceed with the log in. Students and teachers can log in with the given credentials and register by filling up the form. Registration forms consist of full name, password, and the email given by the school. It will automatically send a verification code to the email inputted; verification of email was added for security purposes.

Admin is handling both student and teacher's account, admin can view the teacher's dashboard as well as for the students. It needs to approve the account of the teacher or the student to create an account if it is not registered yet.

In the student dashboard, there are buttons for class, quiz, assignment, progress, chat, and profile. In the class button, students may view what classes are they enrolled to

and join to other classes by having a generated code given by the teacher. By clicking the class tab, students may join a class or leave the class. The information and announcements of the class given by the teacher will be displayed in the dashboard as well as the modules. In the modules given, the percentage of the progress will be shown at the bar. Span of time will be shown after the student analyze or read the modules uploaded and time is reflected to the account of the teacher and a quiz is followed. In the quiz and assignment tab, information about the clicked tab will be viewable, pending's and completed task is shown. Edit and delete button are allowed in this tab. Progress tab aspects to the progress of the student in each quiz and assignments, chat is available to reach out to the teachers if the student has concerns. Editing of profile is available and log out button appears here.

Hence, dashboard for the teachers consist of tabs for classes, quiz, assignment, chat, and profile. In the class tab, here is where teachers are going to add their subject and their own module for the students to view. Teachers track the progress in the class tab unlike in the student dashboard, where it has its own tab for progress. It displays the approximate time of the viewing of the student and the percentage if the student finished reading the module uploaded by the teacher. The tabs for quizzes and assignments displays the students finished task for each assignment and other information's. Add, edit, and delete buttons are available in this tab. Chat tab for teacher who needs to message the student directly for concerns. Editing of profile is available and log out button appears here.

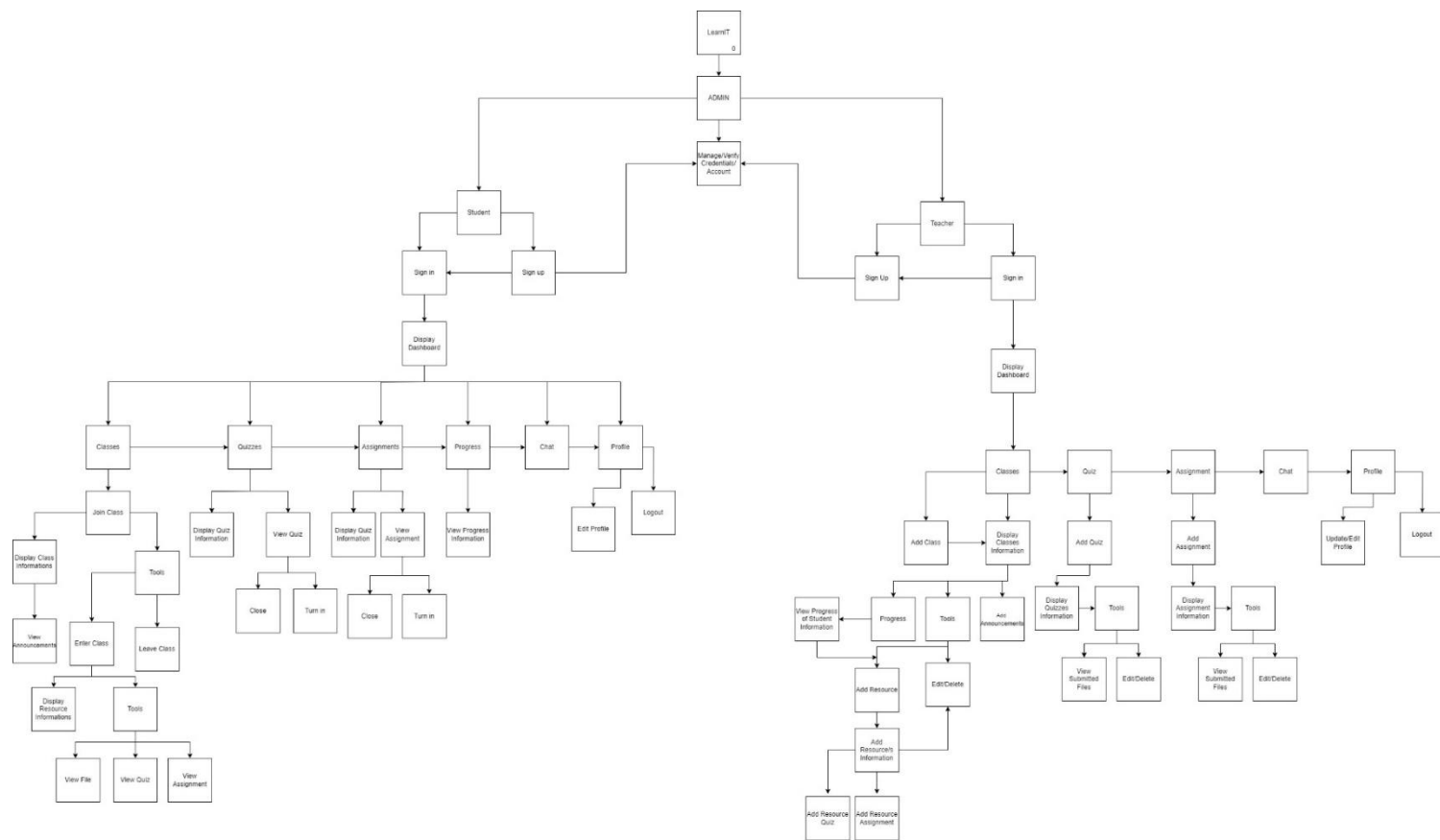


Figure 2. System Flowchart of LearnIT

Software Design

Figure 3 shows that the admin will manage the students and professors, and they will need to log in using their credentials to enter the system. The students and professors need to register first if they do not have an account yet, but the admin needs to verify it before they can log in. The admin will manage the accounts of both students and professors. Students and professors can interact with each other using the chat section. The professor can view the list of students and will manage the students.

The professor will add a new class. Once the professor creates a new class, he or she needs to add a new student. In each class, the professor can add a new assignment and new quiz. The professor can view all turned-in assignments and quizzes and then assign grades to each.

The students can view their classes, and in the class section, they can view progress in all assessments. The students can view their assignments and quizzes. Also, the student will be able to turn in their assignments and quizzes.

Moreover, Figure 3 shows the use case diagram of the system. It presents a graphical representation of possible interactions between a user and a system. It shows which is often complemented by other types of diagrams as well, the numerous use cases and user types that the system has.

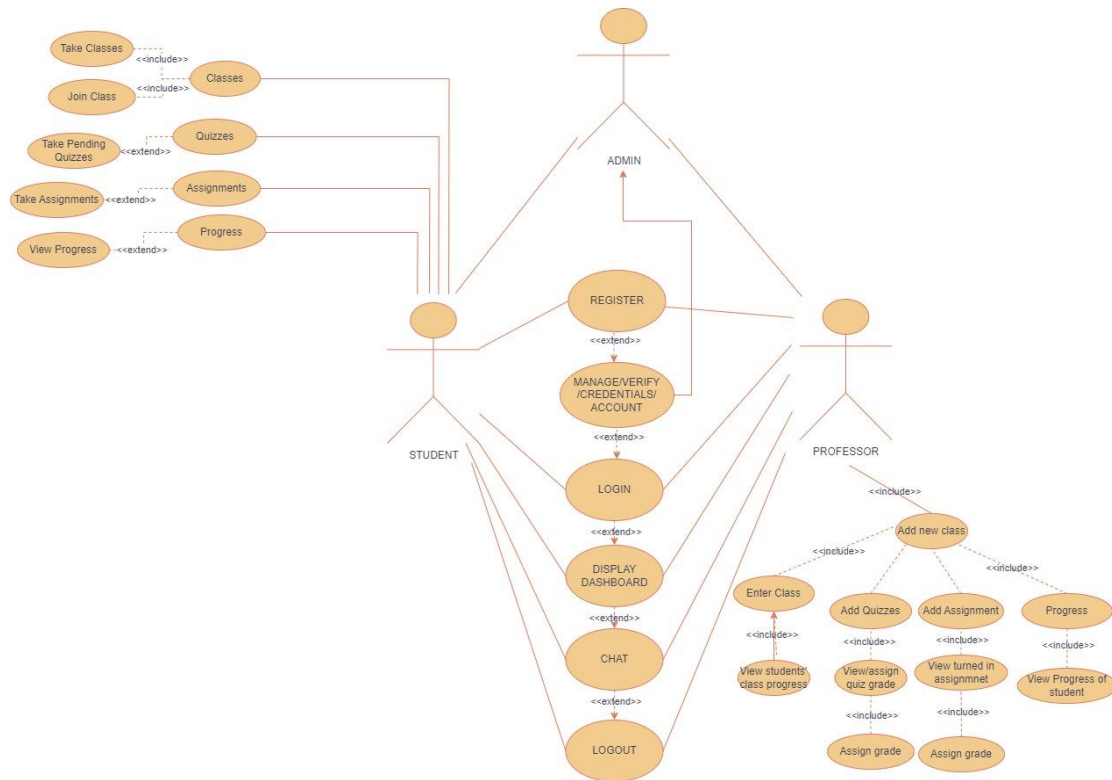


Figure 3. Use Case Diagram of the System

In Figure 4, it shows that the provided data schema outlines a comprehensive structure for managing user information, authentication, educational content, and quizzes within an academic system. Management and oversight are made easier by this technique.

This section demonstrates and addresses the development processes that were employed to create a system that meets the design specifications. It was created using both XAMPP and PHP. Our system's development uses HTML and CSS as well. It is intended to make it simpler to keep track of how students are doing on their tasks.

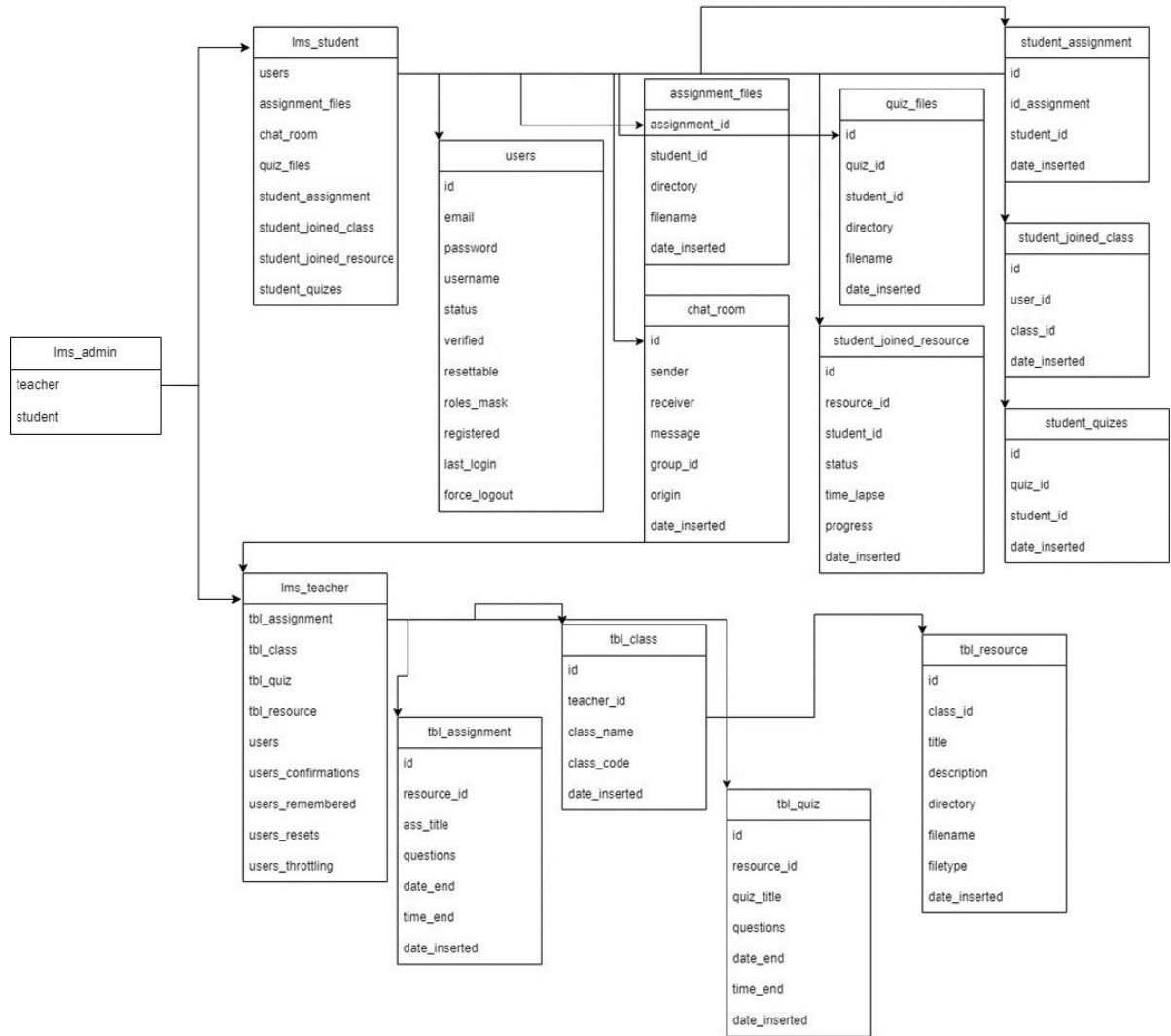


Figure 4. Database Schema of Learning Resource Management System

Project Development

The Learning Resource Management System developed in accordance, which consists of six distinct phases: requirement analysis, system design, coding or implementation, testing, deployment, and maintenance. Additionally, the model incorporates a feedback mechanism, allowing for changes or corrections based on the preceding phase to accommodate required revisions.

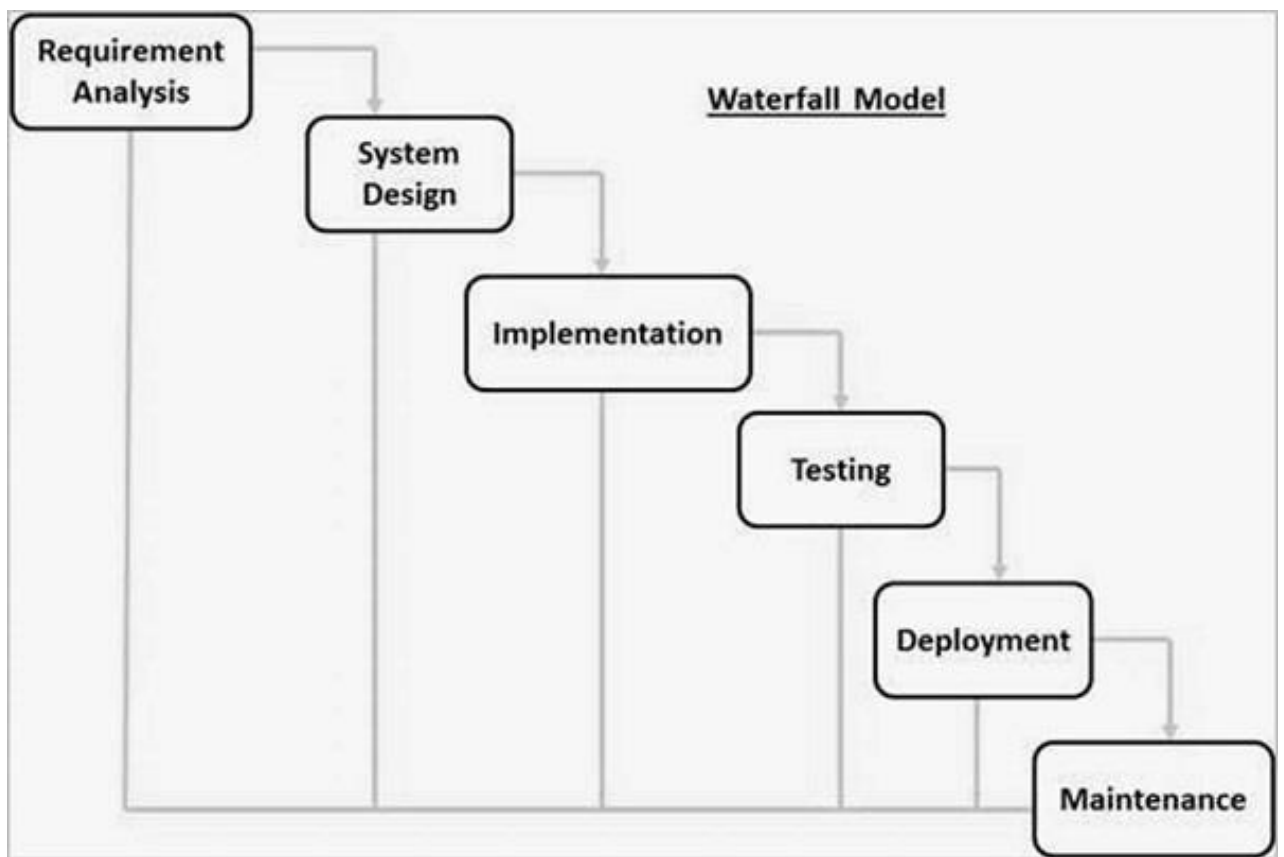


Figure 5: Waterfall Model of Learning Resource Management System

Phase I. Requirement Gathering and Analysis

The researchers collaborated thoroughly during this first phase to collect and evaluate the software requirements. This involves providing specific requirements and comprehending user demands.

Phase II. System Design

In this system design phase, the software architecture is created based on the requirements. It includes defining interfaces, data structures, software architecture, and system specifications. To develop an outline for the entire system is the researchers' goal.

Phase III. Implementation or Coding

This phase includes actual coding the software. Based on the design specifications, the researchers write code. It is a crucial step where the design is transformed into executable code.

Phase IV. Testing

This phase was executed which includes the maintainability and functional suitability of the system. Testing on how the system works smoothly for the users and unexpected errors were corrected.

Phase V. Deployment

After a successful testing phase, the software was deployed in the production environment. Delivering the system to clients or end users is the primary goal of this phase.

Phase VI. Maintenance

During this phase, the program is updated, improved, and any bugs are fixed. It continues to function for the duration of the software, fixing problems that come up throughout the operating period.

Operation and Testing Procedure

The following procedures was undertaken to ensure the system's operation and test its reliability, accuracy, and functionality.

During the testing phase, various resources were employed, including internet access and either a desktop or laptop. The testing protocols conducted focused on assessing functional sustainability and security, and the detailed results are presented in the following tables. These tests involved a comparative analysis between the anticipated and realized outcomes, aiming to verify the system's proper functionality. Table 1 outlines the testing procedure for functionality suitability, while Table 2 delineates the testing procedure for maintainability.

Table 1.

Functional Suitability Testing Procedure

Test Scenario	Procedure	Expected Output
Access Material	1. Login to the student account. 2. Navigate to the materials or documents section.	The material opened without errors.
Select Material	3. Choose specific material to open and read it.	The selected materials are displayed correctly.

Open Material	4. Click on the selected material to open and read it.	Navigation within the material works as expected
Reading Progress Tracking	5. Verify that the system accurately tracks the percentage of the material read. 6. Check if the tracking is updated in a real-time or upon completion.	The tracking is real-time, changes are reflected promptly. The tracking is updated in a real-time or upon completion.
Post-Reading Quiz Access	7. After completing the reading, access the associated quiz or assessment.	The quiz should be accessible after reading.
Complete Quiz	8. Answer quiz questions related to the material.	Quiz questions should be relevant to the material.
Submit Quiz	9. Submit the quiz and verify if the system records the completion.	The system should record and display the completion of the quiz.

Table 1. Functional Suitability Testing Procedure

Table 2.*Maintainability Testing Procedure*

Test Scenario	Procedure	Expected Output
Backup and Recovery	1. Initiate a full system backup and verify that the backup process completes without errors.	Successful backup completion message.
Database Schema Update	2. Apply updates to the database schema and check for any errors during the update process.	Updates database schema without errors.
Error Handling and Logging	3. Trigger a simulated error scenario and check error logs for details and response.	Clears error logs with detailed information, system response to errors is appropriate.
Continuous Improvement	4. Gather user feedback on system improvements and evaluate areas for enhancement.	Positive user feedback, identification of areas for improvement.

Table 2: Maintainability Testing Procedure

Evaluation Procedure

1. The evaluation instrument that was used to assess the acceptability of the system was adapted from the ISO 25010 functional suitability testing procedure and maintainability testing procedure and was used as a basis for the survey's criteria checklist.
2. The evaluation procedure was followed to determine the acceptability of the developed web-based system:
3. Thirty selected respondents composed of (5) high school students, (5) senior high school students, (5) college students, (5) teachers, and (10) information technology students or graduates were invited to evaluate the system.
4. Through demonstrating the system, the researchers showed how the system will works and showed the other features of the system.
5. The evaluator-respondents were asked to try to evaluate the systems' features.
6. The evaluator-respondents were given a survey questionnaire after the demonstration was completed.
7. The survey was arranged and calculated using a statistical mean.

Table 3.

Four-point Likert Scale

Scale	Range	Adjectival Rating
4	3.26 – 4.00	Excellent
3	2.51 – 3.25	Good
2	1.76 – 2.50	Fair
1	1.00 – 1.75	Poor

Chapter 4

RESULTS AND DISCUSSION

This chapter contains the project description, project structure, project capabilities and limitations, test results, and evaluation results.

Project Description

The study developed a web-based supplemental Learning Resource Management System for Sustainable Learning. The system was built to read and track the student's reading progress for the resources that were given by the teachers. Specifically, the system was developed for the teachers so that they can ensure the learning progress of the students.

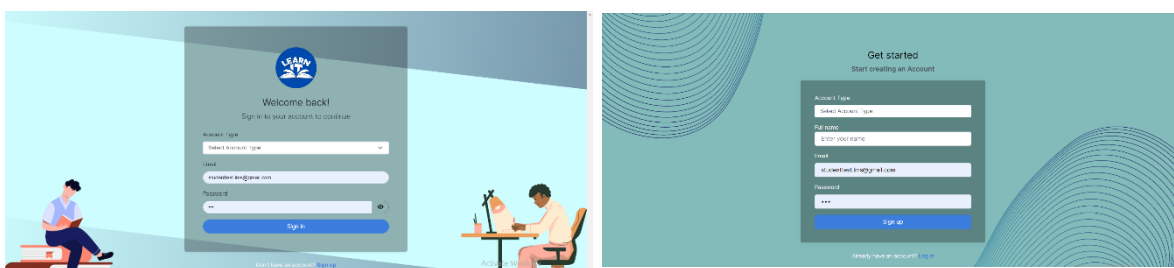


Figure 6. LearnIT Log In & Sign-up Page

Project Structure

The system was developed with five selections: the classes, quiz, assignment, progress, and chat.

a. The System Framework

The framework shown in Figure 7 is the Class tab in student side. The student's class tab consists of a list of all classes, join class, enter class and leave class

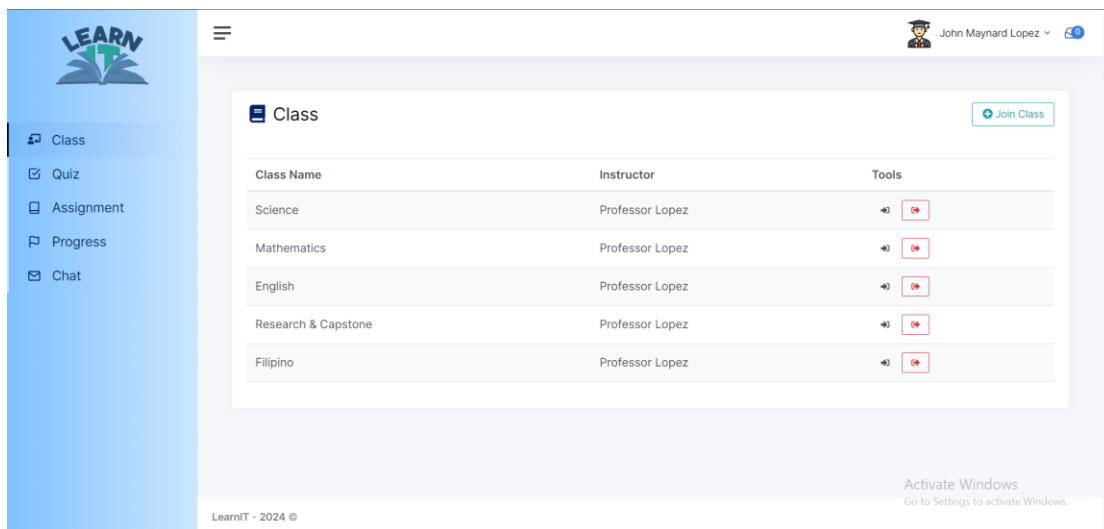


Figure 7. Student's Class Tab

Figure 8 shows the List of Classes in the Teacher's Tab. It consists of add class, view resource, add class, edit class, and delete class button.

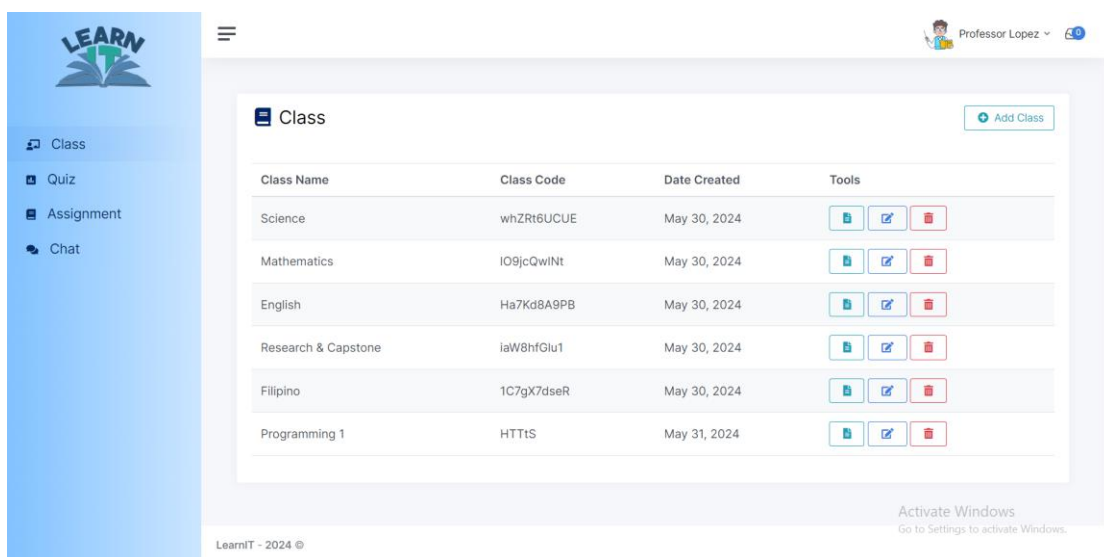


Figure 8. Teacher's Class Tab

Figure 9 shows the quiz tab for students which consists of quiz progress and other information.

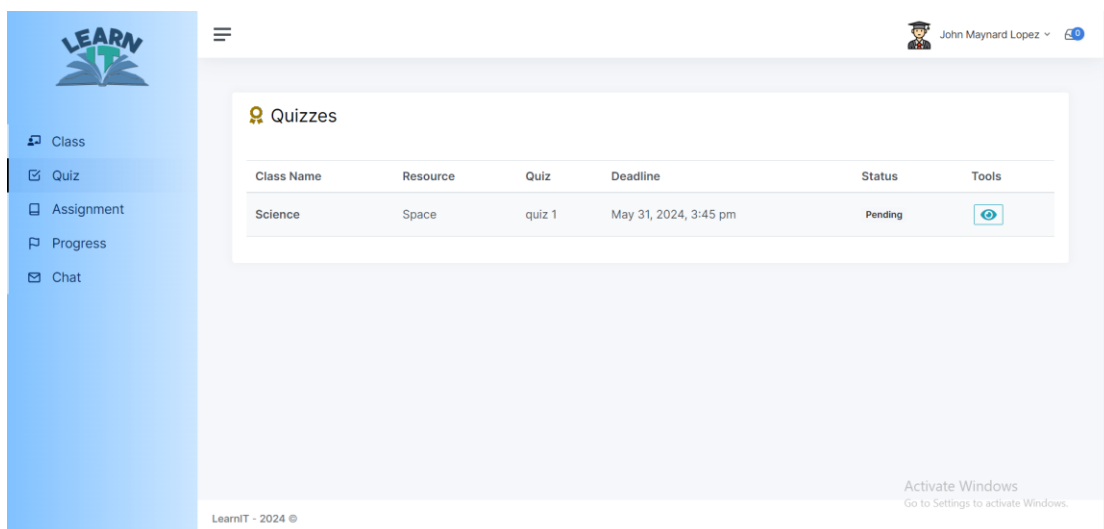


Figure 9. Student's Quiz Tab

Figure 10 shows the quiz tab for teacher's side which consists of list of quizzes that the students already submitted.

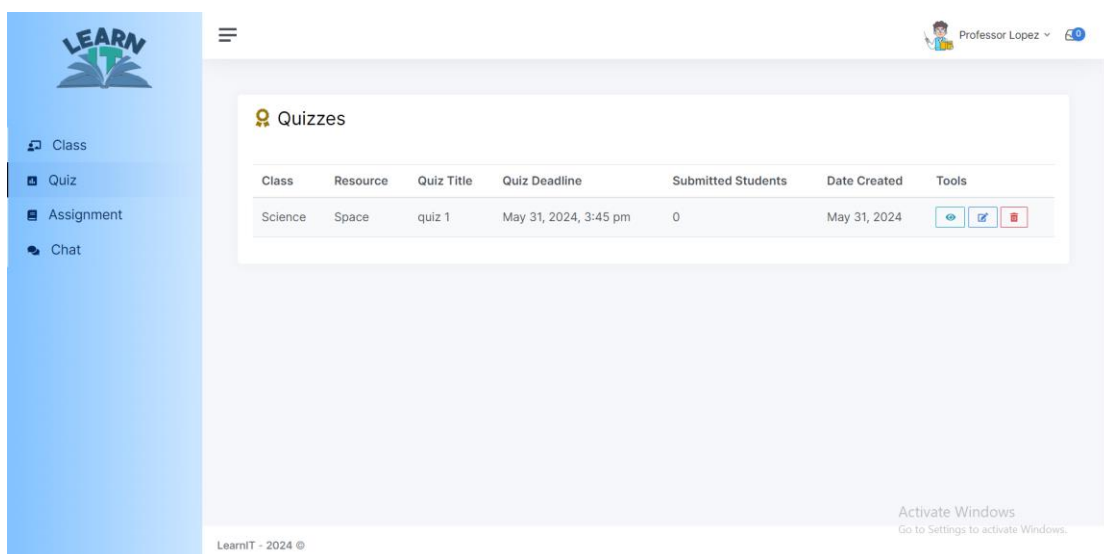


Figure 10. Teacher's Quiz Tab

Figure 11 displays the assignment tab for teacher and student's side. They can make changes or modify the assignment.

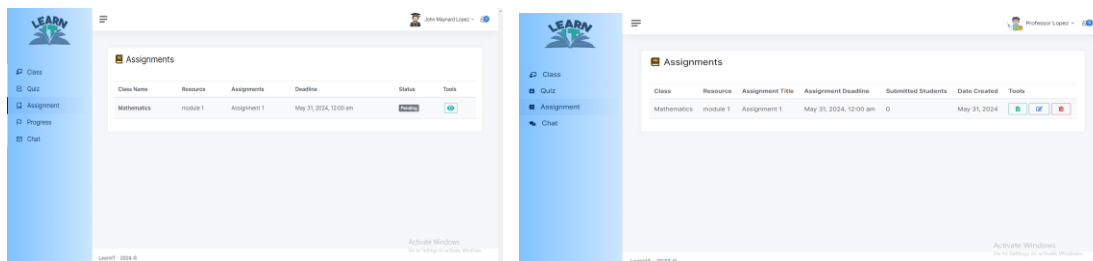


Figure 11. Student and Teacher's Assignment Tab

Figure 12 exhibits the progress tab for students. It consists of the time information which indicates how long the students read the resources. And also, there's a progress indicator which indicates if the students completely read the resources.

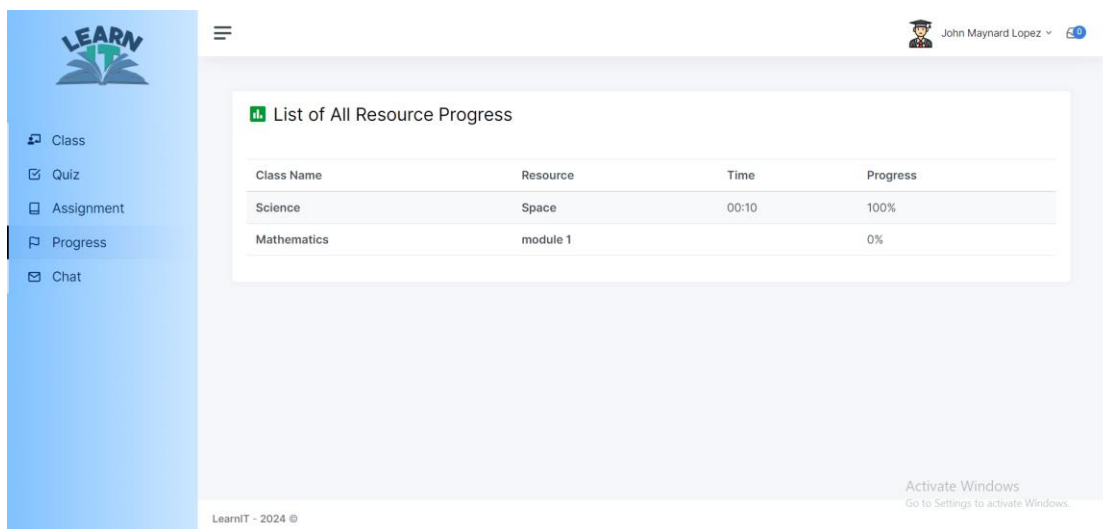
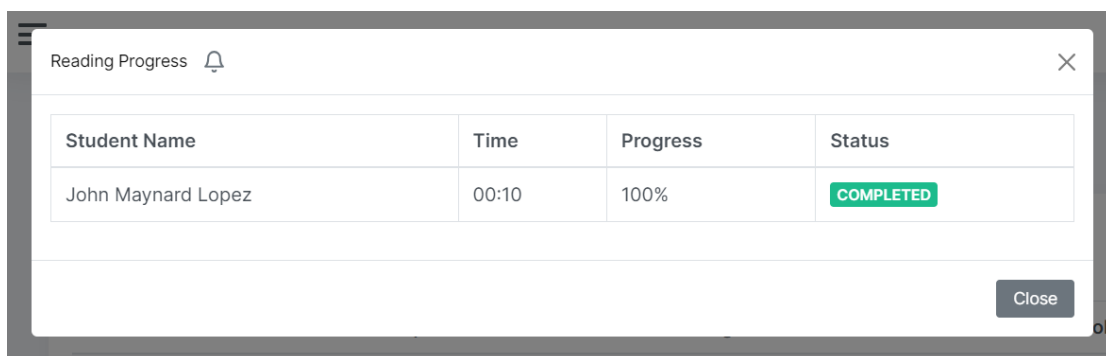


Figure 12. Student's Progress Tab

Figure 13 displays the reading progress of the students, and the status if the students read the resources very well. This is indicated in the teacher's progress tab.



Student Name	Time	Progress	Status
John Maynard Lopez	00:10	100%	COMPLETED

Figure 13. Teacher's Progress Tab

Figure 14 shows the sample resources in student's side. If a student opens a reading material, the reading time is being monitored.

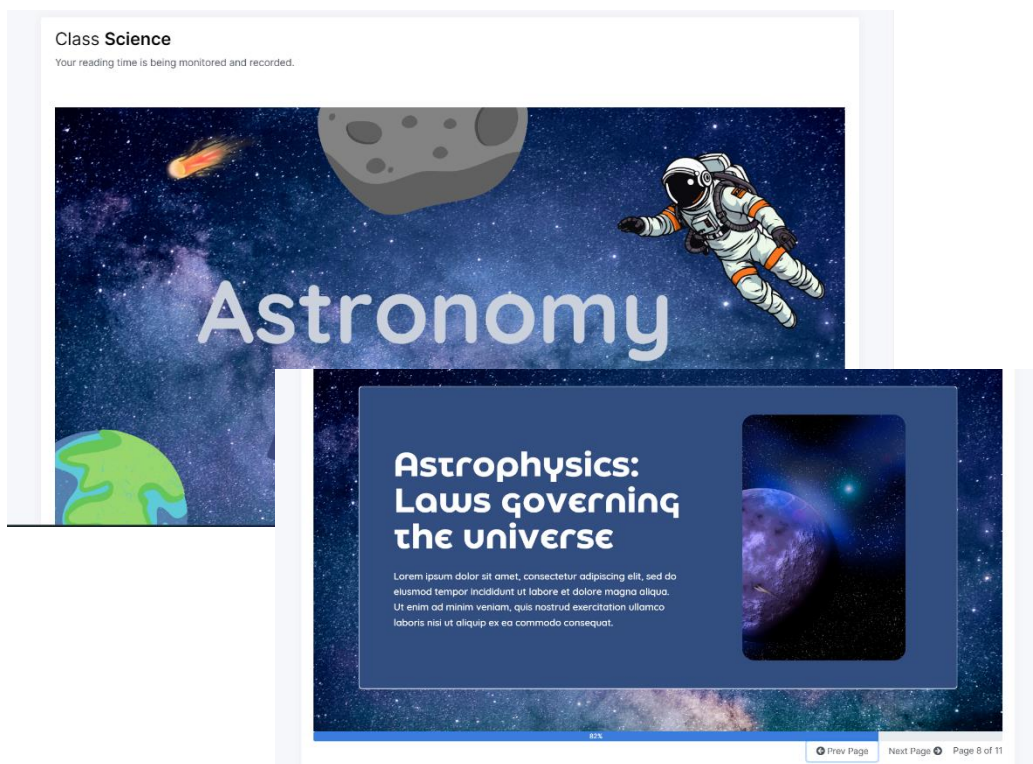


Figure 14. Sample Reading Material (Resources)

Figure 15 presents the chat tab in teacher and student's side.

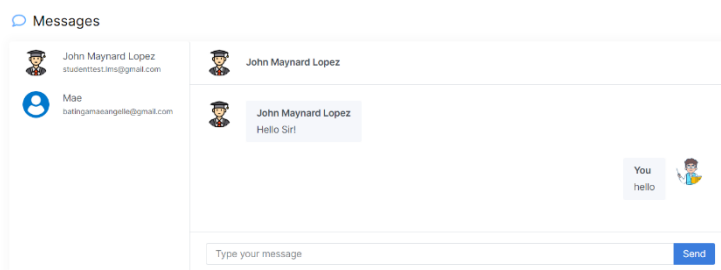


Figure 15. Chat Tab

Figure 16 shows the profile tab for student and teacher's side.

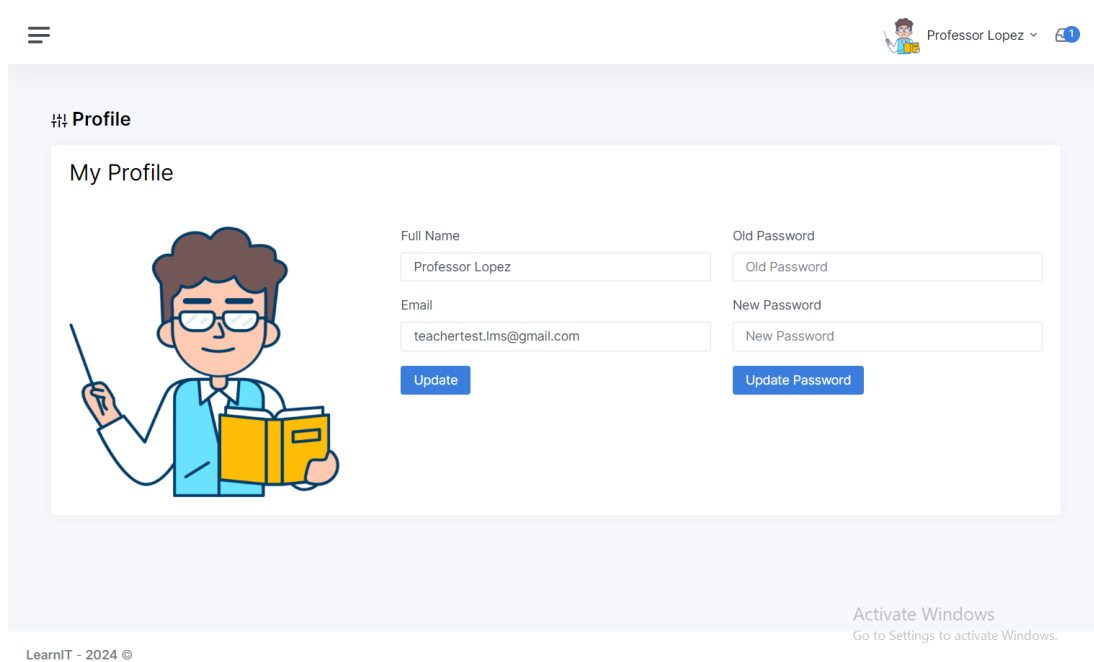
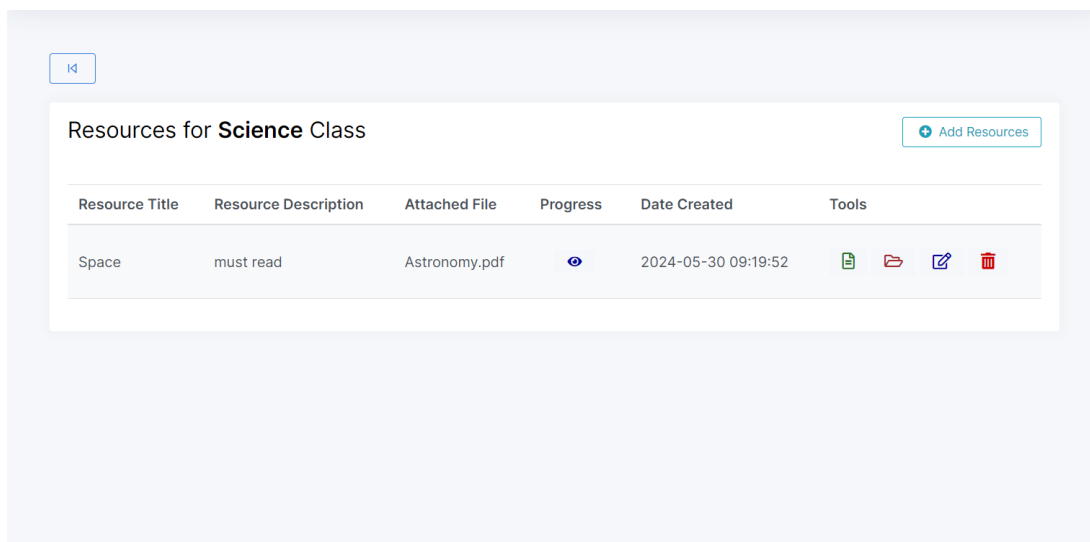


Figure 16. Profile Tab

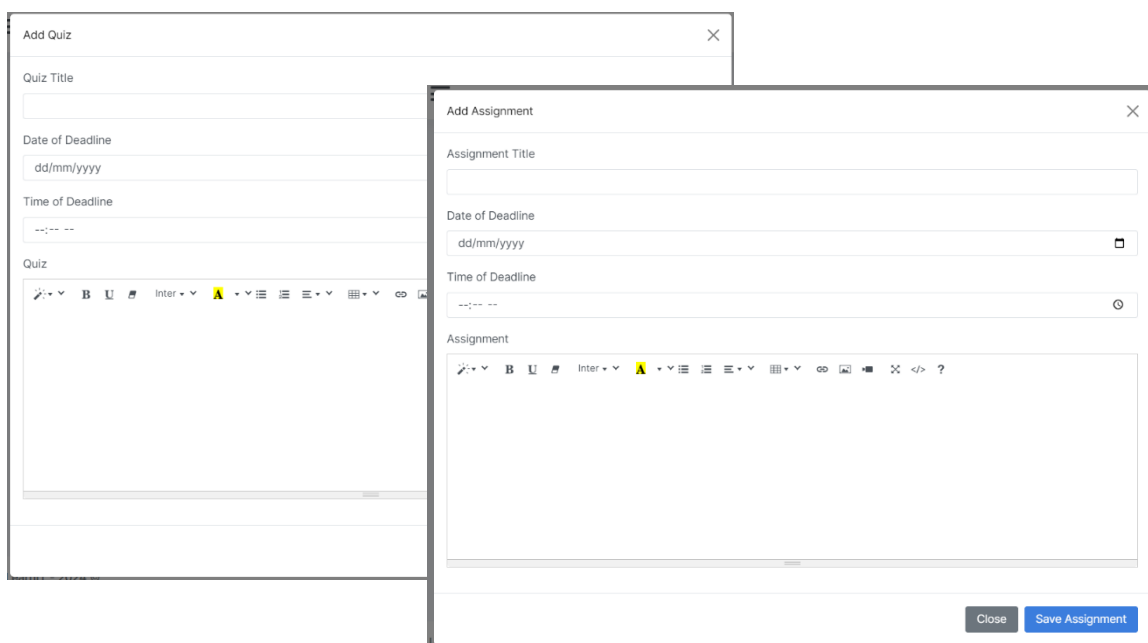
The figure 17 shows the list of resources for each class.



Resource Title	Resource Description	Attached File	Progress	Date Created	Tools
Space	must read	Astronomy.pdf		2024-05-30 09:19:52	

Figure 17. Resources Tab

Figure 18 shows the add assignment and quiz tab for teacher's side. As shown in the picture, the teacher can easily set the time and date of the submission. Also, the teacher can add link, images, and other formats for assignment.



Add Quiz

Quiz Title

Date of Deadline

dd/mm/yyyy

Time of Deadline

Quiz

Close

Add Assignment

Assignment Title

Date of Deadline

dd/mm/yyyy

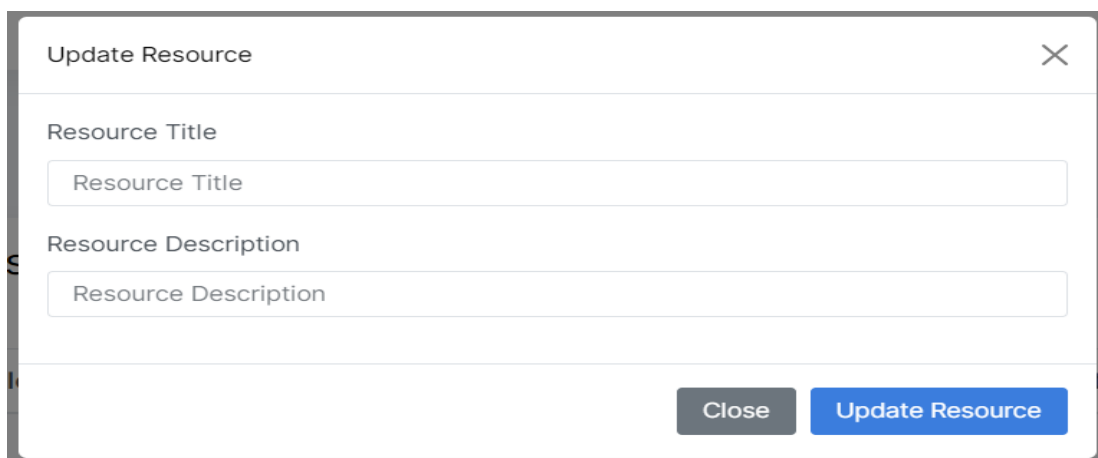
Time of Deadline

Assignment

Close Save Assignment

Figure 18. Add Assignment & Quiz Tab

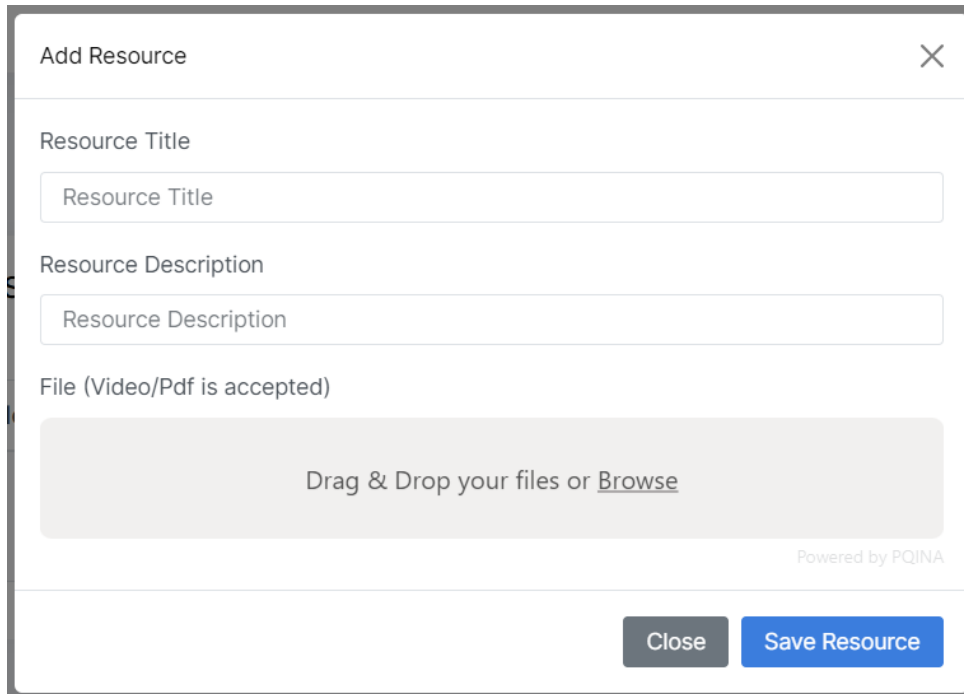
Figure 19 displays the update resource tab in the teacher's side. The teacher can edit the title and description.



The 'Update Resource' dialog box features a title bar with the text 'Update Resource' and a close button (X). Below the title bar, there are two input fields: 'Resource Title' and 'Resource Description', each with a placeholder text of the same name. At the bottom right, there are two buttons: a grey 'Close' button and a blue 'Update Resource' button.

Figure 19. Update Resource Tab

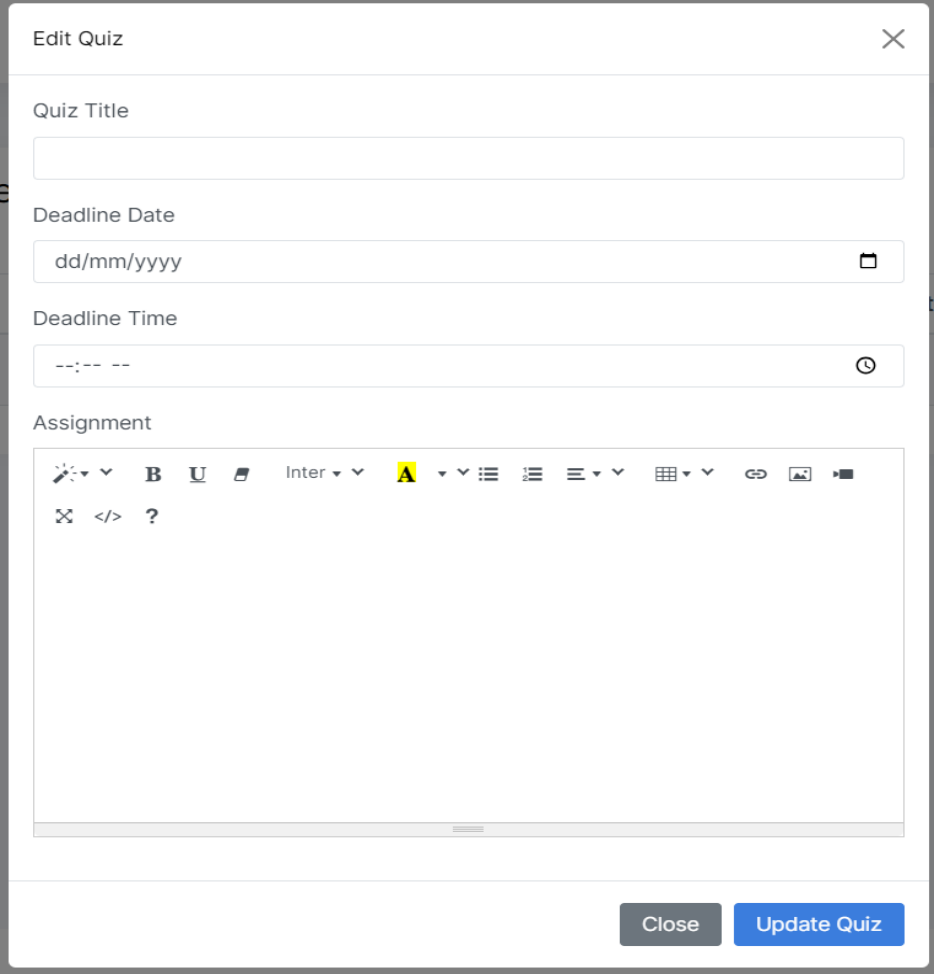
Figure 20 shows the add resource in teacher's tab.



The 'Add Resource' dialog box has a title bar with 'Add Resource' and a close button (X). It contains three input fields: 'Resource Title', 'Resource Description', and 'File (Video/Pdf is accepted)'. The 'File' field has a large grey area with the text 'Drag & Drop your files or [Browse](#)'. Below this area, it says 'Powered by PQINA'. At the bottom right, there are two buttons: a grey 'Close' button and a blue 'Save Resource' button.

Figure 20. Add Resource Tab

Figure 21 shows the edit quiz in teacher's side. The teacher can edit the quiz title, deadline date and time and the quiz instructions.



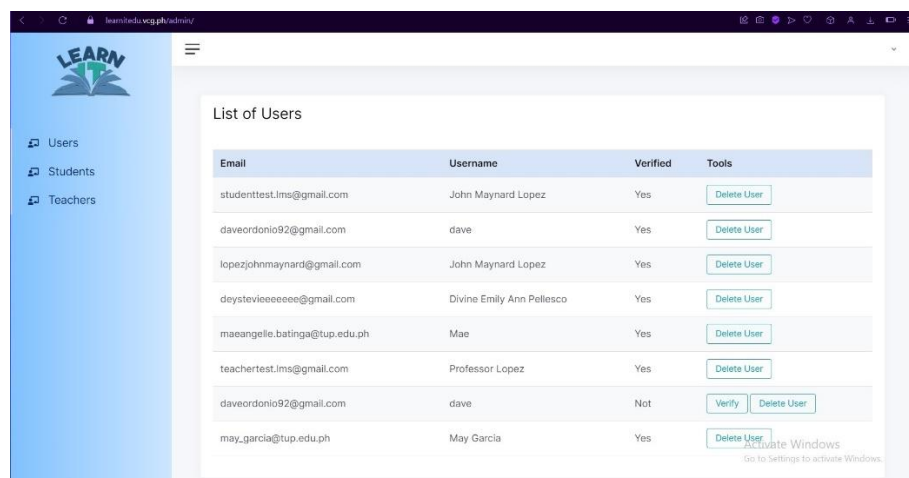
The screenshot shows a modal window titled "Edit Quiz" with a close button (X) in the top right corner. The form contains the following fields and controls:

- Quiz Title:** A text input field.
- Deadline Date:** A date input field with the placeholder "dd/mm/yyyy" and a calendar icon on the right.
- Deadline Time:** A time input field with the placeholder "--:-- --" and a clock icon on the right.
- Assignment:** A rich text editor area with a toolbar containing icons for text color, bold (B), underline (U), link, insert, text background color (A), bulleted list, numbered list, indent, table, link, image, video, unlink, code, and help (?).

At the bottom right of the modal, there are two buttons: "Close" (grey) and "Update Quiz" (blue).

Figure 21. Edit Quiz Tab

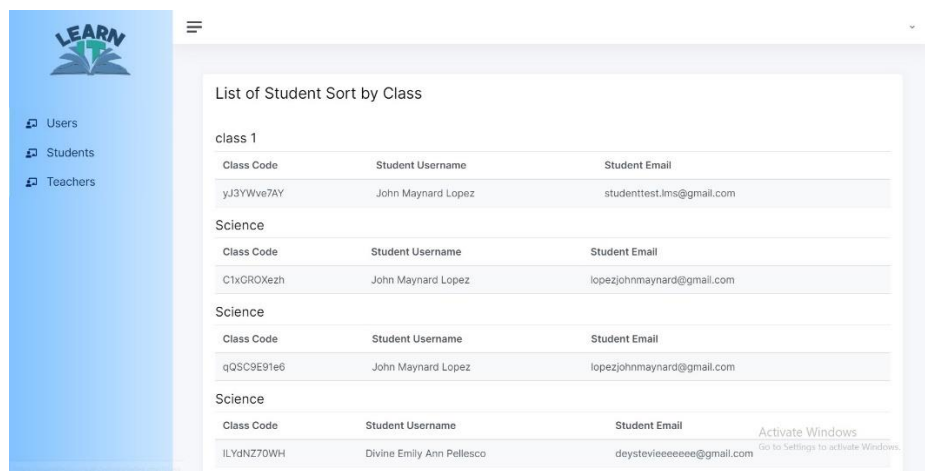
Figure 22 shows the list of all users in admin side. The admin can delete the users. Also, the admin will need to verify or accept the approval request of the users to join on the website.



Email	Username	Verified	Tools
studenttest.lms@gmail.com	John Maynard Lopez	Yes	Delete User
daveordonio92@gmail.com	dave	Yes	Delete User
lopezjohnmaynard@gmail.com	John Maynard Lopez	Yes	Delete User
deystevieeeee@gmail.com	Divine Emily Ann Pellesco	Yes	Delete User
maeangelie.batinga@tup.edu.ph	Mae	Yes	Delete User
teachertest.lms@gmail.com	Professor Lopez	Yes	Delete User
daveordonio92@gmail.com	dave	Not	Verify Delete User
may.garcia@tup.edu.ph	May Garcia	Yes	Delete User

Figure 22. List of All Users in Admin Side

Figure 23 displays the list of students sort by class in admin side. In this part, the admin will see the class where the students belong.



Class Code	Student Username	Student Email
yJ3YWv7AY	John Maynard Lopez	studenttest.lms@gmail.com
Science		
C1xGROXezh	John Maynard Lopez	lopezjohnmaynard@gmail.com
Science		
qQSC9E91e6	John Maynard Lopez	lopezjohnmaynard@gmail.com
Science		
ILYdNZ70WH	Divine Emily Ann Pellesco	deystevieeeee@gmail.com

Figure 23. List of Students Sort by Class in Admin Side

Figure 24 shows the list of teachers and their classes in admin side. The admin will be going to see all the classes of the teachers in this tab.

List of Teachers and Their Classes	
dave's Classes	
Class Name	Teacher Email
	daveordonio92@gmail.com
May Garcia's Classes	
Class Name	Teacher Email
BSIT-NS-4A	may_garcia@tup.edu.ph
english	may_garcia@tup.edu.ph
Computer Networking 1	may_garcia@tup.edu.ph
Programming 2	may_garcia@tup.edu.ph
History	may_garcia@tup.edu.ph
Science	may_garcia@tup.edu.ph
Professor Lopez's Classes	

Figure 24. List of Teachers & Their Classes in Admin Side

Project Capabilities and Limitations

The following are the capabilities of the developed system:

1. The system can accept new users and the verification will be sent to the users' email
2. In the teachers' side, the system can add new resource file and new class. While in the student's side, the student can join class and can read the uploaded resources.
3. The system can provide detailed information with symbols that can be read for visualization.
4. The submitted files and the progress of the student can be read by the system.
5. The data for student and teachers' side can be integrated in both sides.
6. The assignments that have been turned in by the students can be undone.
7. The files that the students will upload can be in any format.
8. The user profiles, and uploaded resources can be customized

9. The system can create a class where the students can join using the class code provided by the teacher. This class code can only be seen by the teacher.

The following are the limitations of the developed system:

1. The web-based system cannot be used without internet connection. Specifically, the system cannot be run offline.
2. The system cannot be use without a user account.
3. The quizzes that have been turned in by the students cannot be undone.
4. The system cannot read the uploaded resources of the format is in word file or docs.
5. The system cannot be used for virtual meetings only for tracking the students' progress.
6. The system is not for announcements purposes.

Test Results

The developed system was created using PHP language, Xampp, MySQL databases. The system can run on Windows 7 or later and in computer desktop's web browser. The test results on the functional suitability and maintainability of the developed system are presented in the tables that follow.

Table 4.

Functional Suitability Testing Results

Test Scenario	Procedure	Observed Results
Access Material	1. Login to the student account. 2. Navigate to the materials or documents section.	The system opened without errors.
Select Material	3. Choose specific material to open and read it.	The selected materials were displayed correctly.
Open Material	4. Click on the selected material to open and read it.	Navigation within the material works as expected
Reading Progress Tracking	5. Verify that the system accurately tracks the percentage of the material read.	The system accurately tracks the percentage of the material read.

	6. Verify that the system accurately tracks the percentage of the material read.	The tracking was real-time, the changes reflect promptly.
	7. Check if the tracking is updated in a real-time or upon completion.	The tracking was updated in a real-time or upon completion.
Post-Reading Quiz Access	8. After completing the reading, access the associated quiz or assessment.	The quiz was accessible after reading.
Complete Quiz	9. Answer quiz questions related to the material.	Quiz questions were relevant to the material.
Submit Quiz	10. Submit the quiz and verify if the system records the completion.	The system recorded and displayed the completion of the quiz.
Leave Class	11. Click the leave class button	The student successfully left class.
Join Class	12. Enter the class code	After entering the class code, the student successfully entered the class

Table 4. Functional Suitability Testing Results

Table 5.*Maintainability Testing Results*

Test Scenario	Procedure	Observed Results
Backup and Recovery	1. Initiate a full system backup and verify that the backup process completes without errors.	Successful backup completion message.
Database Schema Update	2. Apply updates to the database schema and check for any errors during the update process.	Updates database schema without errors.
Error Handling and Logging	3. Trigger a simulated error scenario and check error logs for details and response.	Clear error logs with detailed information, system response to errors is appropriate.
Continuous Improvement	4. Gather user feedback on system improvements and evaluate areas for enhancement.	Positive user feedback, identification of areas for improvement.

Table 5: *Maintainability Testing Results*

Evaluation Results

The web-based system was evaluated to determine its functional suitability, and maintainability. The respondents consisted of purposely selected high school students, senior high school students, college of any course, IT students, teachers and LearnIT users who are the actual users. Table 6 shows the summary of evaluation.

Table 6.

Summary of Evaluation

Criteria	Mean	Adjectival Rating
A. Functional Suitability		
1. Functional Completeness	3.77	Excellent
2. Functional Correctness	3.87	Excellent
3. Functional Appropriateness	3.77	Excellent
<i>Criterion Weighted Mean</i>	<i>3.80</i>	<i>Excellent</i>
B. Maintainability		
1. Modularity	3.63	Excellent
2. Reusability	3.70	Excellent
3. Analyzability	3.73	Excellent
4. Modifiability	3.70	Excellent
5. Testability	3.70	Excellent
<i>Criterion Weighted Mean</i>	<i>3.69</i>	<i>Excellent</i>
Grand Weighted Mean	3.74	Excellent

As seen in Table 6, the web-based system obtained its highest rating under “Functional Correctness” with a weighted mean of 3.87 described as “Excellent”.

This rating indicates that all the set objectives were accomplished via the system's functions and the system met the functional requirements outlined in the project scope. Also, this rating indicates that the web-based system consistently delivers accurate and reliable results.

The web-based system obtained its lowest rating under "Maintainability" with a weighted mean of 3.69 described as "Excellent". This rating indicates that there could be other features that may be added in the system to improve it.

Overall, the web-based system obtained a grand weighted mean rating of 3.74 interpreted as "Excellent" which suggests that the developed "LearnIT Learning Resource Management System for Sustainable Learning" is a web-based system that is excellent in tracking and checking the progress of the student's reading time so that the teachers can easily detect if the students really read the resources that were given to them.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains a summary of findings, conclusions derived and the corresponding recommendations for the enhancement of the system.

Summary of Findings

Based on the test and evaluation result, the developed structure entitled “LearnIT Learning Resource Management System for Sustainable Learning” established the effectiveness and efficiency of the system that provides engaging and accessible educational experiences for users.

- Test Result

1. **Functional Suitability.** The test results showed that the system meet the needs and requirements of the users of the system efficiently where it involved testing the system’s features.
2. **Maintainability.** The test results showed that it is a functional system that has good maintainability and security, on how easily the system can be updated, managed, and enhance over time which ensures the system remains functional and relevant to users’ needs.

- Evaluation Results

1. **Functional Suitability.** The respondents rated this criterion as excellent where the objectives and functions of the system met their standards for the web-based learning system.
2. **Maintainability.** The respondents rated this criterion as excellent regarding on how bugs and errors can be easily fixed with minimal changes and how to distinguish a countered error, how efficient the system is to the users, and easy to run.

Conclusions

The following conclusions were derived from the above findings:

1. The web-based learning system was successfully designed such that:
 - a. The professors can efficiently add new resources and classes, while students can seamlessly join classes and access uploaded materials.
 - b. The professors and students can monitor submitted files and track student progress.
 - c. The professor can see the progress of each student.
 - d. The students should finish to read or watch the resources before taking the quiz.
 - e. The chat tab can exchange messages real-time
2. The web-based learning system developed using web development tools such as the XAMPP, PHP, MySQL, HTML, CSS, Java Script, Bootstrap, and involved collecting data from the possible users such as students and professors.

3. The web-based learning system was tested and evaluated in terms of its functional suitability, and maintainability using google forms and determined its level of acceptability with an overall mean of 3.75 interpreted as Excellent.

Recommendations

The following recommendations are stated below for suggested improvements of the developed system.

1. There should be a place where the teachers can post an announcement.
2. There should be a notification tab so that the students will know if the teachers have uploaded the quiz, assignment, and resources.
3. The teachers should be able to view the link that the students passed in the assignment tab and quiz tab.
4. The title of the submitted quiz and assignment should be visible.
5. There should be a place where the teachers can input the results of the students' quizzes and assignments.

Appendix A

SAMPLE SURVEY SHEET

Technological University of the Philippines

College of Science

Computer Studies Department

Name: _____ Degree/Grade/Profession: _____ Date: _____

Direction: Please encircle the appropriate number of your rating to evaluate the project entitled “LearnIT: A Supplemental Learning Resource Management System for Sustainable Learning” using the scale below:

4 – Excellent 3 – Good 2 – Fair 1 – Poor

LearnIT: A Supplemental Learning Resource Management System for Sustainable Learning					
Criteria		Rating			
A. Functionality Suitability					
1.	Functional Completeness. All of the set objectives are accomplished via the Framework's functions.	4	3	2	1
2.	Functional Correctness. The system consistently delivers accurate and reliable results.	4	3	2	1
3.	Functional Appropriateness. The system meets the functional requirements outlined in the project scope.	4	3	2	1
B. Maintainability					
1.	Modularity. A system's components can be separated and recombined. Developers make changes to one part of the system without affecting others.	4	3	2	1
2.	Reusability. The system remains stable and can be used for a long period of time.	4	3	2	1
3.	Analyzability. Developers are able to comprehend the system, detect issues, and determine what has to be changed.	4	3	2	1
4.	Modifiability. The system is adaptable to modifications, such as bug repairs, performance improvements, and adjustments for new settings or specifications.	4	3	2	1
5.	Testability. Modifiability. The system is adaptable to modifications, such as bug repairs, performance improvements, and adjustments for new settings or specifications.	4	3	2	1

Comments/Suggestions:

Appendix B

COMPATIBILITY TEST RESULTS

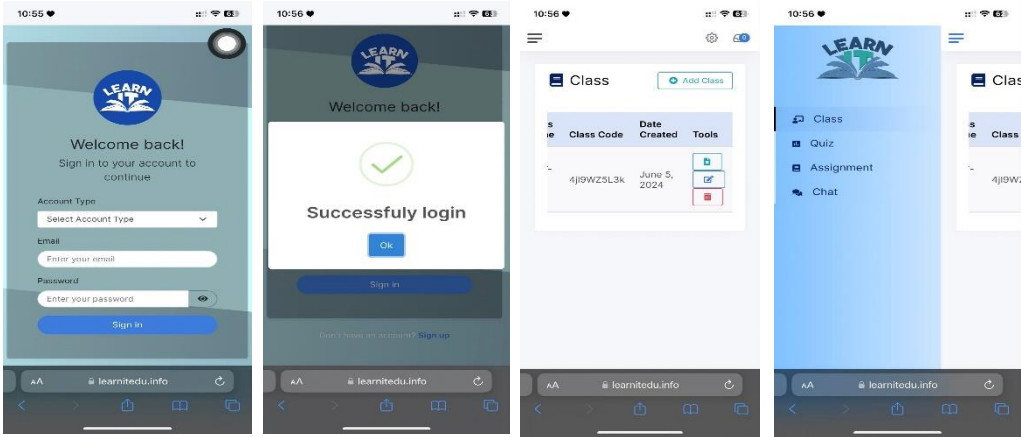


Figure 25. Compatibility Test Results on IOS Co-existence

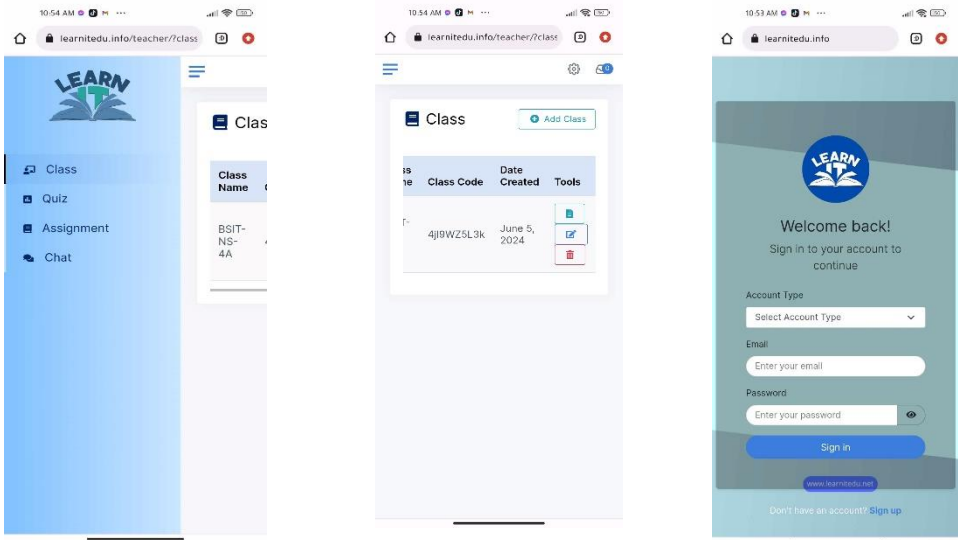


Figure 26. Compatibility Test Results on Android Co-existence

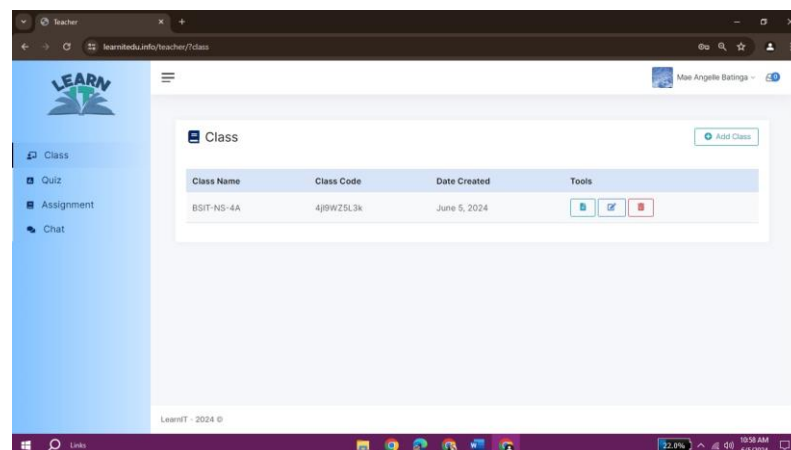
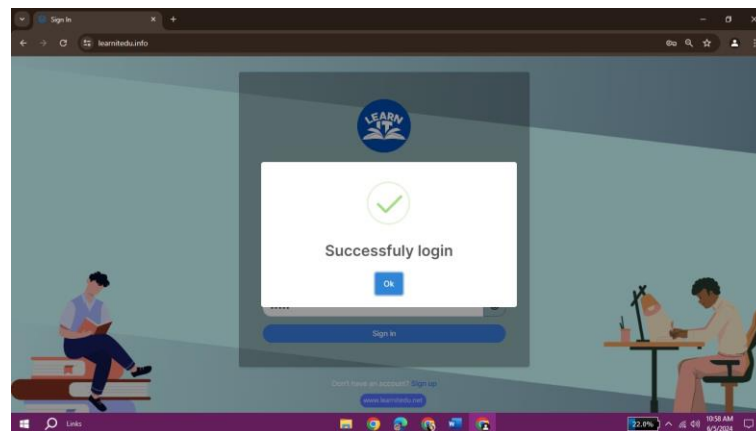
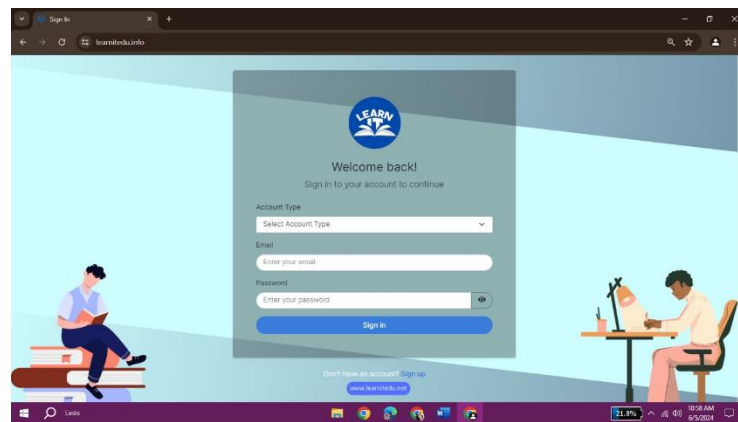


Figure 27. Compatibility Test Results on Web Browser Co-existence

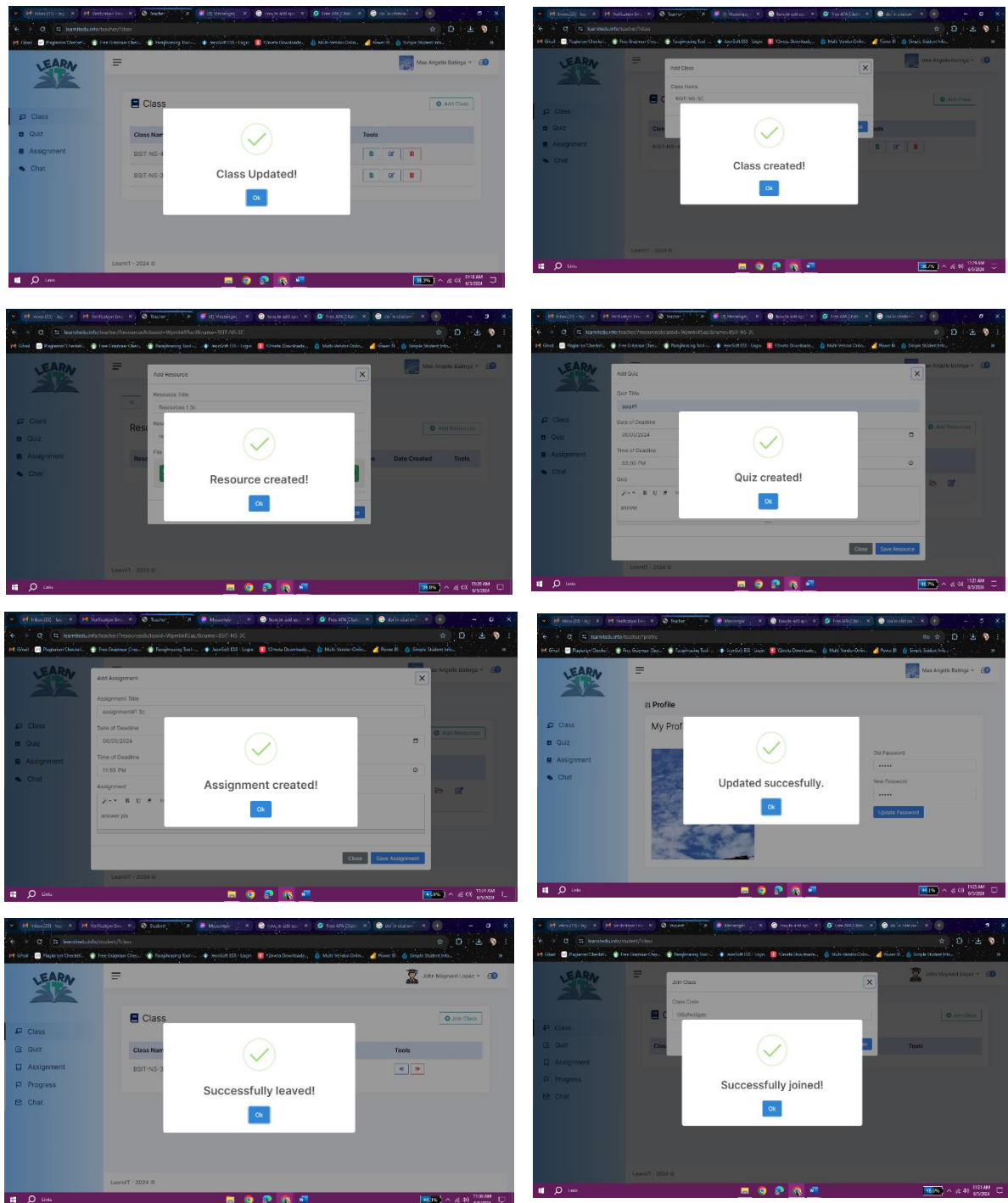


Figure 28. Functional Suitability Test Result

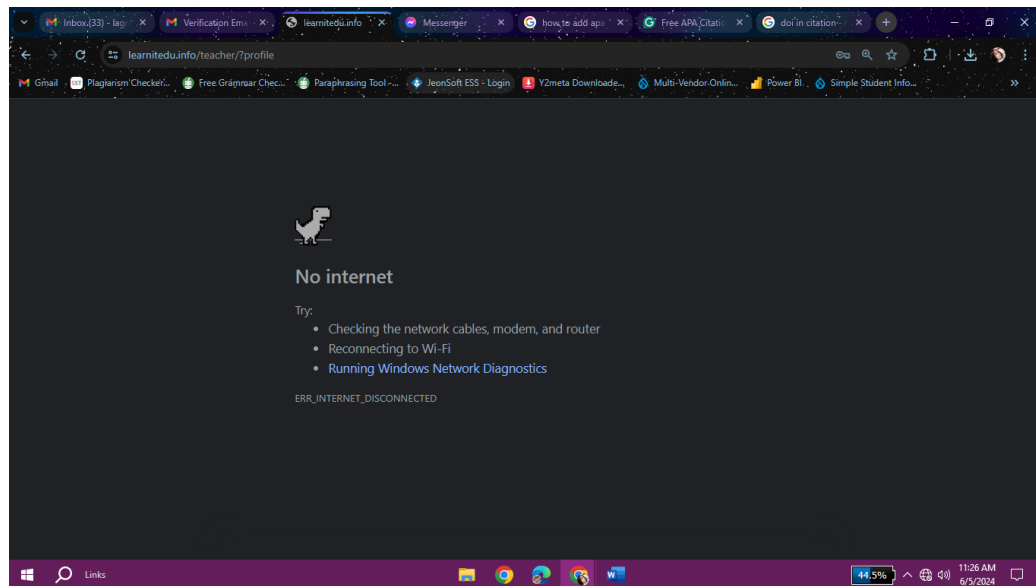


Figure 29. Functional Suitability Test Result on User Error Protection

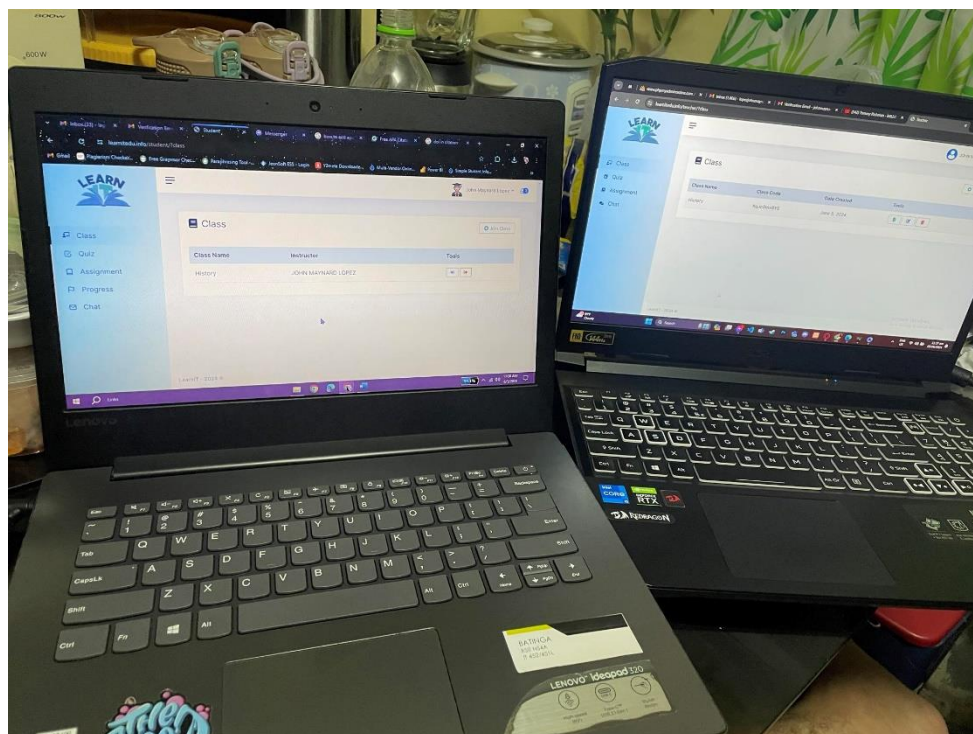



Figure 30. Usability Test Result on Accessibility


Appendix C

SURVEY QUESTIONNAIRE AND RESULTS SHEETS



LearnIT: A Supplemental Learning Resource Management For Sustainable Learning


The study aims to create and design a web-based system that allows the teacher to track the students's reading progress using the resources that were given to them. Also, the system has a lock feature for the quiz that can only be unlocked if the student finishes reading the given resources. The teachers can evaluate the students to see if they read properly or not.


batingamaeangelle@gmail.com [Switch account](#)  Draft saved

* Indicates required question

Email *

batingamaeangelle@gmail.com

[Next](#)  Page 1 of 6 [Clear form](#)



LearnIT: A Supplemental Learning Resource Management System For Sustainable Learning

batingamaeangelle@gmail.com [Switch account](#)

DATA PRIVACY ACT OF 2012

It is the policy of the State to protect the fundamental human right of privacy, of communication while ensuring free flow of information to promote innovation and growth. The State recognizes the vital role of information and communications technology in nation-building and its inherent obligation to ensure that personal information in information and communications systems in the government and in the private sector are secured and protected.

[Back](#) [Next](#) Page 2 of 6 [Clear form](#)

PERSONAL INFORMATION

Name *

d

Date *

Date

05/18/2024

Select which degree, grade, profession are you in: *

☐ IT Professional

☐ College Student (any course)

☒ Information Technology Student

☐ Senior High School

☐ Junior High School


☐ Teacher

[Back](#) [Next](#) Page 3 of 6 [Clear form](#)

Video Presentation of our Capstone Thesis Project

Welcome to our video presentation! Before you complete our survey, please watch this brief demo. It covers the survey's objectives, methodology, and key findings, providing essential context and insights to help you answer the questions effectively. Thank you for your participation!

VIDEO DEMONSTRATION



[Back](#) [Next](#) Page 4 of 6 [Clear form](#)

FUNCTIONAL SUITABILITY

Functional Suitability is a degree to which a software system or application satisfies its requirements and accomplishes its intended goals and purposes is referred to as functional suitability.

Functional Completeness: *

All of the set objectives are accomplished via the Framework's functions.

☐ 1 - Poor

☐ 2 - Fair

☐ 3 - Good

☐ 4 - Excellent

Functional Correctness: *

The system consistently delivers accurate and reliable results.

☐ 1 - Poor

☐ 2 - Fair

☐ 3 - Good

☐ 4 - Excellent

Functional Appropriateness *

The system meets the functional requirements outlined in the project scope

- ☐ 1 - Poor
- ☐ 2 - Fair
- ☐ 3 - Good
- ☐ 4 - Excellent

MAINTAINABILITY

Maintainability defines how easily a software system or program may be altered to fix bugs, enhance functionality, or adjust to a changing environment. It is a crucial component of software quality that influences a product's cost-effectiveness and sustainability over time.

Modularity: *

A system's components can be separated and recombined. Developers make changes to one part of the system without affecting others.

- ☐ 1 - Poor
- ☐ 2 - Fair
- ☐ 3 - Good
- ☐ 4 - Excellent

Reusability: *

The system remains stable and can be used for a long period of time.

- ☐ 1 - Poor
- ☐ 2 - Fair
- ☐ 3 - Good
- ☐ 4 - Excellent

Analyzability: *

Developers are able to comprehend the system, detect issues, and determine what has to be changed.

☐ 1 - Poor

☐ 2 - Fair

☐ 3 - Good

☐ 4 - Excellent

Modifiability: *

The system is adaptable to modifications, such as bug repairs, performance improvements, and adjustments for new settings or specifications.

☐ 1 - Poor

☐ 2 - Fair

☐ 3 - Good

☐ 4 - Excellent

Testability: *

The system has undergone various examinations and test runs before implementing to insure the quality and efficient functionality.

☐ 1 - Poor

☐ 2 - Fair

Testability: *

The system has undergone various examinations and test runs before implementing to insure the quality and efficient functionality.

☐ 1 - Poor

☐ 2 - Fair

☐ 3 - Good

☐ 4 - Excellent

Comments and Suggestions: *

Your answer

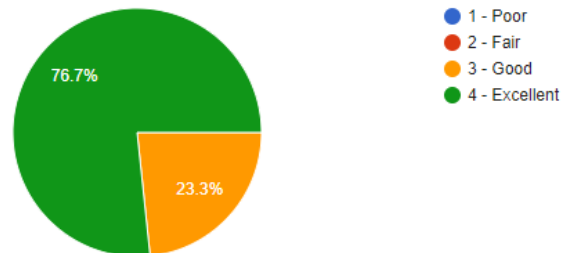
FUNCTIONAL SUITABILITY

Functional Completeness:

 Copy

All of the set objectives are accomplished via the Framework's functions.

30 responses

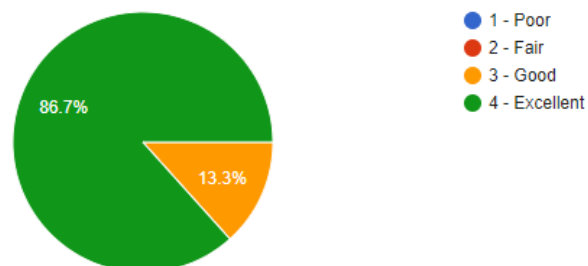


Functional Correctness:

 Copy

The system consistently delivers accurate and reliable results.

30 responses

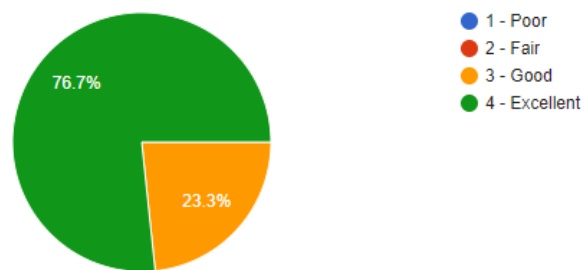


Functional Appropriateness

 Copy

The system meets the functional requirements outlined in the project scope

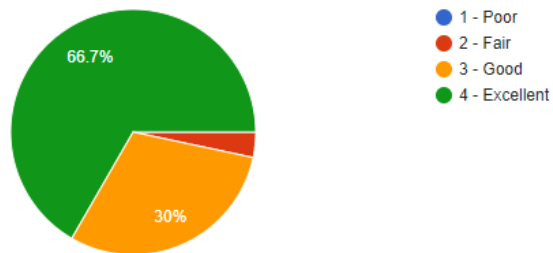
30 responses



MAINTAINABILITY**Modularity:** Copy

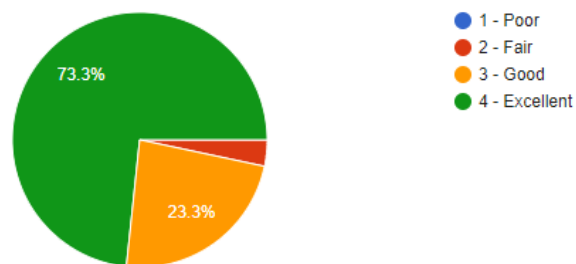
A system's components can be separated and recombined. Developers make changes to one part of the system without affecting others.

30 responses

**Reusability:** Copy

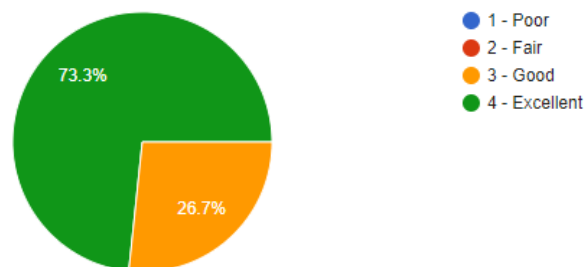
The system remains stable and can be used for a long period of time.

30 responses

**Analyzability:** Copy

Developers are able to comprehend the system, detect issues, and determine what has to be changed.

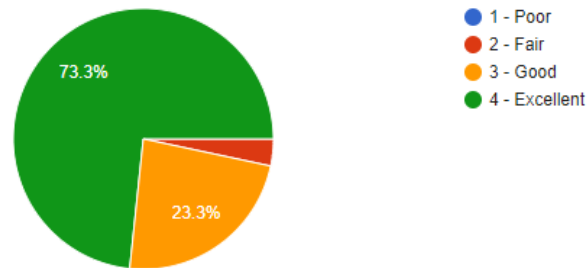
30 responses



Modifiability: [Copy](#)

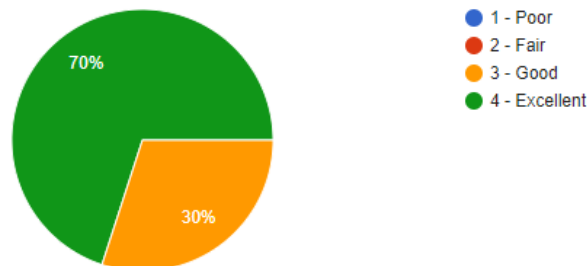
The system is adaptable to modifications, such as bug repairs, performance improvements, and adjustments for new settings or specifications.

30 responses

**Testability:** [Copy](#)

The system has undergone various examinations and test runs before implementing to insure the quality and efficient functionality.

30 responses



LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	0	0			
good	3	7	21		Q1	
excellent	4	23	92			
			3.77			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	0	0			
good	3	4	12		Q2	
excellent	4	26	104			
			3.87			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	0	0			
good	3	7	21		Q3	
excellent	4	23	92			
			3.77			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	1	2		Q4	
good	3	9	27			
excellent	4	20	80			
			3.63			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	1	2		Q5	
good	3	7	21			
excellent	4	22	88			
			3.70			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	0	0		Q6	
good	3	8	24			
excellent	4	22	88			
			3.73			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	1	2		Q7	
good	3	7	21			
excellent	4	22	88			
			3.70			
LEVEL	numerical value	responses	total			
poor	1	0	0			
fair	2	0	0		Q8	
good	3	9	27			
excellent	4	21	84			
			3.70			
4	3.25 – 4.00	Excellent				
3	2.50 – 3.24	Good				
2	1.75 – 2.49	Fair				
1	1.00 – 1.74	Poor				

Appendix D

User Manual

1. Teacher User Manual

1.1 How to create an Account?

- a. Click sign up and select account type, if you are an Educator you must choose “Teacher”.
- b. Next, input your full name, Email address and Password.
- c. Next, Click sign up and you will wait for the admin to verify your account.
- d. Once you are already verified, you can now go back to log in page and log in your account.

1.2 How to create class?

- a. After you have logged in your teacher account, you can now access the Dashboard, click “add class” and input the Name of your Class and then click save.
- b. After you have created a class, you can also see the class code. This code will be used by the students for them to join your class.

1.3 How to Add Resources/Learning Materials?

- a. After you have created a Class, click “View Resources” button and then click “Add Resources”.
- b. Input your Resources/Learning Material title, Description and then click “Browse”.
- c. After you have clicked “Browse”, you can now browse for your Resources/Learning Materials.

- d. After you have uploaded the Resources/Learning Material into the System, click “Save Resource” to post the Resources/Learning Material.

1.4 How to create Quiz?

- a. Once you have already posted a Learning Material, you can prepare the quiz by clicking the “add quiz” button.
- b. After clicking “add quiz” button, input the Quiz title, Date of Deadline and time of deadline.
- c. You can create the quiz manually by typing it or you can create MS form quiz by clicking the “Link” button.
- d. Paste your URL and the click “Insert Link”.
- e. Click “save”.

1.5 How to create Assignment?

- a. Click “add assignment”
- b. After clicking “add assignment” button, input the Assignment title, Date of Deadline and time of deadline.
- c. You can create the assignment manually by typing it or you can create an MS form assignment by clicking the “Link” button.
- d. Paste your URL and the click “Insert Link”.
- e. Click “save”

1.5 How to see Reading Progress of Student?

- a. Click “View Resources”
- b. Click the “eye icon/View Progress”

- c. You can now view the list of students with corresponding time and status (ex. Completed, Incomplete)

1.6 How to see the students who submitted a Quiz?

- a. Click “Quiz” in the sidebar
- b. After you have clicked “Quiz”, you can see the number of students that already submitted a quiz.
- c. Click “eye button”
- d. You can now view the list of the student who submitted and can also download their submitted quiz.

1.7 How to see the students who submitted an Assignment?

- a. Click “Assignment” in the sidebar
- b. After you have clicked “Assignment”, you can see the number of students that already submitted an Assignment.
- c. Click “eye button”
- d. You can now view the list of the student who submitted and can also download their submitted assignment.

1.8 How to change Password?

- a. Click the Profile tab.
- b. Input old password
- c. Input new password
- d. Click “update password”

1.9 How to change profile picture?

- a. Click the Profile tab
- b. Click the default avatar
- c. Click “browse”
- d. Select your image and then click save.

2. Student User Manual

2.1 How to create an Account?

- a. Click sign up and select account type, if you are an student you must choose “Student”.
- b. Next, input your full name, Email address and Password.
- c. Next, Click sign up and you will wait for the admin to verify your account.
- d. Once you are already verified, you can now go back to log in page and log in your account.

2.2 How to join a class?

- a. After you have logged in your student account, you can now access the Dashboard, click “join class” and input the code of your Class and then click “join class”.

2.3 How to view the Resources/Learning Materials?

- a. Click “Enter class” and then click “view files”
- b. After you have clicked “view files”, you can now read the learning material.
- c. Notice that your Reading Progress Percentage will be visible while reading.

- d. If the Learning Material has a corresponding Quiz, you cannot take the quiz if you have not yet finished reading the learning material.

2.4 How to take a Quiz?

- a. Click “Enter Class”
- b. Click the yellow dropdown button to view the quiz or you can click “Quiz” in the sidebar menu.
- c. if you are not done reading the reading material, you are not allowed to take the quiz and you can see a pop notification that will inform you to finish reading the learning material.
- d. If you have finished reading the learning material, you are already allowed to take the quiz.

2.5 How to take an Assignment?

- a. Click “Enter Class”
- b. Click the dropdown button beside the yellow dropdown button to view the assignment or you can click “Assignment” in the sidebar menu.
- c. Click the Assignment and submit your Answer.
- d. You can undo your submitted assignment by clicking the “Undo” button.

2.6 How to view your Reading Progress?

- a. Click “Progress” in the sidebar menu.
- b. After you click “Progress”, you can now see your reading time and Percentage.

2.7 How to change Password?

- a. Click the Profile tab.
- b. Input old password
- c. Input new password
- d. Click “update password”

2.8 How to change profile picture?

- a. Click the Profile tab
- b. Click the default avatar
- c. Click “browse”
- d. Select your image and then click save.

3. Admin Manual**3.1 How to access admin account?**

- a. To access admin account, type “learnitedu.vcg.ph/admin”
- b. Log in using your username and password.

3.2 How to approve signing up applications of new users?

- a. Click “users” in the sidebar menu
- b. Now you can view the email, Username, account status (ex. Verified, not verified) of the user.
- c. Click "Verify" user to confirm their signing up application.

- d. You can also delete the user by clicking the delete user button.

3.3 How to view all student/teacher users?

- a. Click “Students” in the sidebar menu
- b. After you have clicked the “students” you can now view the list of students sorted by different classes.
- c. Click “teachers” in the sidebar menu.
- d. After you have clicked the “teachers”, you can now view the list of teacher user sorted by their corresponding classes.

Appendix E

THESIS GRAMMARIAN CERTIFICATION

Appendix F

CERTIFICATE OF SIMILARITY INDEX

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RESEARCHERS' PROFILE



MAE ANGELLE L. BATINGA

She is a competent, dedicated, detail-oriented BS Information Technology student who aims to have professional experience with a fast-growing company that would enhance her knowledge gained in pursuing IT degree, be able to apply her learnings, and deliver consistent excellence to help the company gain momentum in achieving its goals and objectives.

GWA 1.39

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EDUCATION

College (2020 - 2024)
Bachelor of Science in Information Technology
 Technological University of the Philippines - Manila

Senior High School (2018 - 2020)
Information and Communication Technologies
 University of Makati

Junior High School (2014 - 2018)
Tibagan High School
 Makati City

Elementary (2008 - 2014)
East Rembo Elementary School
 Makati City

SKILLS

- Basic Troubleshooting
- Has profound knowledge in Networking (Cisco)
- Basic knowledge and skills in Web Development
- Knowledgeable user of MS Office (Excel, PowerPoint, MS Word)
- Has profound knowledge in Database (MySQL)
- Public Speaking
- Effective Leadership
- Written and verbal communication skills
- Able to multi-task and prioritize deadlines
- Good customer service relationship

EXPERIENCES

- January to March 2018-2020**
 University of Makati | J.P. Rizal Extension, Taguig, 1215 Metro Manila
Student Assistant
 - Tasked for assisting the students inside the faculty room.
 - Tasked for creating PowerPoint presentation and encoding information of the students.
 - Tasked for creating and sending emails.
- November 1-30 2019**
 Authentic Chinese Cuisine | 60 C. Alameda, Pateros, Metro Manila
Information Encoder
 - Responsible for encoding the product stocks, payments and changes.
 - Assisted customer inquiries.
 - Tasked for reconciling cash drawers at the end of the shift.
- January 26 - March 15, 2020**
 The Maritime Training Center of the Philippines | TM Kalaw corner J. Bocobo St. Ermita, Manila
Technical Support Intern
 - Troubleshooting technical issues.
 - Tracks if there is any software or hardware issues.
 - Setting up an account for new users.
 - Documents hardware or software issues.
 - Log bugs and enhancement requests.
 - Repairing and replacing hardware equipment if necessary.
- August 14, 2023 - February 18, 2024**
 Concentrix SM Megamall | 8th to 11th Fl, SM Megamall, Bldg. C Doña Julia Vargas Ave, Ortigas Center, Mandaluyong, 1554 Metro Manila
Customer Support Representative - Primary Voice US (Ticket Sales Account)
 - Providing satisfactory level support to customers.
 - Answering sales query.
 - Tasked to do refunds, exchanges and payments through coding.
 - Providing instructions and accurate information to the customers.
 - Helping customers to troubleshoot some problems on their end.
 - Securing personal information of the customers such as bank accounts.
 - Tasked to book tickets.

SEMINARS/TRAININGS ATTENDED

Quantum Computing: Are you ready for the future of Computing?

November 7, 2022

Technological University of the Philippines

The Future of Computing: An Exploration of Cloud Computing, Cloud Migration, and Growth of IoT Networks

November 14, 2022

Technological University of the Philippines

Cloud Computing: Utilization of Cloud Service Solutions

December 15, 2022

Technological University of the Philippines

Cybersecurity in 21st Century

January 11, 2023

Technological University of the Philippines

Role of the Youth on Volunteerism in Sustaining Peace and Security

December 13, 2020

Technological University of the Philippines

Drug Abuse Prevention, and Control

November 15, 2020

Technological University of the Philippines

Live Tech Podcast: Career vs. Passion

February 12, 2022

University of Makati

AWARDS AND ACHIEVEMENTS

Best in Debate 2020, English for Academic Purposes Program

March 2020

HSU, University of Makati

Certificate of Completion in Internship

March 2020

The Maritime Training Center of the Philippines

DEAN'S LISTER

1ST YEAR, 2ND SEMESTER, 2020-2021

Technological University of the Philippines

DEAN'S LISTER

2ND YEAR, 2ND SEMESTER, 2021-2022

Technological University of the Philippines

DEAN'S LISTER

3RD YEAR, 1ST SEMESTER, 2022-2023

Technological University of the Philippines

DEAN'S LISTER

3RD YEAR, 2ND SEMESTER, 2022-2023

Technological University of the Philippines

PRESIDENT'S LISTER

4TH YEAR, 1ST SEMESTER, 2023-2024

Technological University of the Philippines

TOP AVERAGE HANDLING TIME

September 8, 2023

Concentrix Megamall

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EDUCATION

Technological University of the Philippines
Bachelor of Science–Information Technology
2020 – Present

Carlos P. Garcia High School
Junior & Senior High
2014–2020

Beata Elementary School
Pandacan, Manila
2008–2014

SKILLS

- Microsoft Office Suite
- Web developing: HTML, CSS and JavaScript, PHP
- Quality Assurance for AI Software
- MySQL

OTHERS

- Youth Leader and Multimedia Operator at City of God

CARLOS JIREH CLAIRE S.

WORK EXPERIENCE

PART-TIME VIRTUAL ASSISTANT

- Posted blog posts to clients' website
- Handled promotional posts to Social Media Accounts daily
- Report creation on work done, progress and rankings
- Monitored Organic Rankings of clients' websites and Google
- Maintains clients' Google Business Listing
- Monitored Google Business Listing rankings

LEARN SEEKER COMPANY

- Performed Quality Assurance test for the AI software
- Data entry and photo editing

AWARDS RECIEVED

Dean's Lister – 4th year in Technological University of the Philippines, 2024
Dean's Lister – 2nd year in Technological University of the Philippines, 2022
Dean's Lister – 1st year in Technological University of the Philippines, 2021
With Honors – SHS in Carlos P. Garcia High School, April 2019
1st Honor – Carlos P. Garcia High School, April 2018

SEMINARS, WORKSHOPS AND CONVENTIONS ATTENDED

- PNSTP Webinar: "Role of the Youth on Volunteerism in Sustaining Peace and Security", Technological University of the Philippines – Manila, December 13, 2020
- NSTP Webinar: "Cyber Bullying Awareness and Prevention", Technological University of the Philippines – Manila, November 22, 2020
- NSTP Webinar: "Drug Abuse, Prevention, and Control", Technological University of the Philippines – Manila, November 15, 2020

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JOHN MAYNARD V. LOPEZ



About Me

Hi, My name is John Maynard Lopez, I am a Bachelor of Science in Information Technology student, I have some knowledge in software and hardware troubleshooting, computer networking and other computer related issues.



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Limpio Hardware Moriones St,
Tondo Manila



September 19, 2002

EXPERTISE

- Management Skills
- Creativity
- Computer Troubleshooting
- Computer Networking
- Critical Thinking
- Leadership

EXPERIENCE

TECHNICAL SUPPORT REPRESENTATIVE
MICROSOFT ONLINE SAFETY - CONCENTRIX
2023-2024

EDUCATION

Primary Education

San Roque Central Elementary School 2008-2014
Zone 5, San Roque N. Samar

Secondary Education (HS)

Asian Development Foundation College 2014-2018
University Town, Catarman Northern Samar

Secondary Education (SHS)

University of Eastern Philippines 2018-2020
University Town, Catarman Northern Samar

Tertiary Education

Technological university of the Philippines - Manila
Ayala Blvd, Ermita, Manila, 1000 Metro Manila

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📍 1228-Anakbayan Ana Samiento Street, Dalandon Alley Malate Manila

Education

Philippine Christian University Manila

2018-2020 Senior High School TVL-ICT

Technological University of the Philippines Manila

2020 - Present

Expertise

UI/UX

Videography

Knowledgeable in Java, C++, CSS, HTML, React

Problem Solving

Good Communication Skills

Language

Tagalog

English

DIVINE EMILY ANN PELLESCO

Profile

An assiduous, hard working and aspiring UI/UX designer skilled in Figma and a reliable individual seeking for a role in an association. Knowledgeable in other field of Programming Languages and willing to learn more in the preposition of others. Committed to clear communication and collaboration for impactful user experiences.



Experience

2019-2020

Philippine Christian University

CREOTEC

- Senior High School Work Immersion
- Debugging Java Codes
- Testing PCB's



Projects Done

- 3 Way Security System (Arduino)
- Commissioning Activities (Java, C++)



Qualifications and Skills

- Goal oriented person.
- Hard working and work oriented.
- Effectively communicated ideas and solutions, showcasing strong collaboration skills.
- Demonstrated strong problem-solving skills in the context of UI/UX design challenges.
- Capable at HTML, CSS, JavaScript, React.
- Skilful in Microsoft Office, Internet, social media, and Programming Languages (C, C++, and Java).
- Possessed a keen eye for design, ensuring a focus on aesthetics and user experience.
- Highly driven to execute things.



Honors Achieved

- With Honors - SHS in Philippine Christian University - Manila, Grade 11 & 12
- Dean's Lister (1st Year - A.Y. 2021 - 2022)
- Dean's Lister (3rd Year - A.Y. 2022 - 2023)
- Dean's Lister (4th year - A.Y 2023-2024)