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COLLEGE OF COMPUTER STUDIES

**THE DEVELOPMENT OF OJT RECORDS AND NARRATIVE REPORT
ARCHIVING SYSTEM WITH SENTIMENT ANALYSIS**

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CHAPTER I

THE PROJECT AND ITS BACKGROUND

Introduction

Based on a study conducted by Briones and Grageda (2020), there are several challenges faced by higher education institutions in managing OJT programs, including the lack of a centralized database, the manual and time-consuming process of managing the data, and the risk of data loss or corruption.

To address these challenges, this study will develop an OJT Records and Narrative Reports Archiving System that will streamline the management of the data generated by the OJT program. The system will provide a user-friendly interface for students, faculty, and administrators to access and utilize the data, making it easier to track student progress and assess the effectiveness of the program.

This study will utilize the latest software technologies and best practices in database management to develop the archiving system. The study is expected to contribute to the improvement of the management of OJT programs in higher education institutions, leading to better outcomes for students and more effective assessment of the programs by faculty and administrators.

Project Context

The development of an OJT records and narrative reports archiving system is an important undertaking for educational institutions such as Laguna State Polytechnic University, San Pablo City Campus. On-the-job training (OJT) is a vital part of any student's academic journey, as it provides them with practical, hands-on experience in their chosen field of study. However, managing and organizing OJT records and narrative reports can be a daunting task for universities and colleges, especially if they have a large number of students undergoing OJT. In the absence of an efficient and reliable system, it can be challenging to keep track of student progress, monitor their performance, and provide them with constructive feedback. In this context, the development of an OJT records and narrative reports archiving system for Laguna State Polytechnic University, San Pablo City Campus is an important step towards enhancing the quality of education and ensuring that students are adequately prepared for the workforce. This system will not only benefit students but also faculty, and administrators who will have access to a comprehensive and reliable record of student OJT progress.

The development of an OJT records and narrative reports archiving system for Laguna State Polytechnic University, San Pablo City Campus involves several important considerations. One of the main challenges is to design a system that can efficiently and accurately record, store, and retrieve student OJT records and narrative reports. To achieve this, the system should be user-friendly, intuitive, and easy to navigate. It should also be flexible enough to accommodate OJT requirements. In addition, the system should be secure and capable of protecting

sensitive student data from unauthorized access or manipulation. Another crucial consideration is to ensure that the system is scalable and can handle the increasing volume of OJT records and reports as the number of students grow. The system should also be able to integrate with existing university systems, such as the student information system, to minimize redundancy and ensure data consistency.

The main problem that the development of the OJT records and narrative reports archiving system for Laguna State Polytechnic University, San Pablo City Campus seeks to solve is the manual and tedious process of managing OJT records and narrative reports. Currently, the university relies on a manual system for recording and storing OJT records and reports, which can be time-consuming, error-prone, and inefficient. The process involves collecting hard copies of narrative reports from students, manually inputting data into spreadsheets or databases, and physically storing the reports in filing cabinets or boxes. This manual process is not only labor-intensive but also prone to errors, such as data duplication, inconsistency, and misplacement of records. Additionally, it can be challenging to keep track of students' progress, monitor their performance, and provide them with timely and constructive feedback. Without an efficient and reliable system, managing OJT records and narrative reports can be a daunting task, especially for universities and colleges with a large number of students undergoing OJT. This can lead to incomplete or inaccurate records, lost data, and delays in providing feedback and support to students. Ultimately, this can impact the quality of education and the ability of students to succeed in their careers.

According to a study conducted by Cruz and Alcantara (2019) on the OJT practices and experiences of hospitality management students in the university, it was found that students faced challenges in completing their narrative reports due to a lack of guidance and support from their OJT supervisors. The study also noted that there were delays in receiving feedback and evaluations of their reports, which affected their overall OJT experience. According to a report by the Commission on Higher Education (CHED) on the state of higher education in the Philippines (CHED, 2020), it should identified the need for universities to enhance their OJT management systems and ensure that they are capable of providing accurate and up-to-date records of students' OJT progress.

According to a study conducted by Al-Obaidi, Abdul-Niby, and Sulaiman (2020) in Malaysia found that the traditional paper-based method of managing OJT records was time-consuming, prone to errors, and lacked proper security measures. The study recommends the use of a digital archiving system to improve the OJT records management process.

Another study by Jimenez and Lang (2018) in the Philippines found that the lack of a proper archiving system for OJT records and narrative reports can result in inconsistencies in the data and difficulty in tracking the progress of students. The study recommends the implementation of a centralized digital archiving system to address these issues.

The absence of a developed OJT Records and Narrative Reports Archiving System for Laguna State Polytechnic University, San Pablo City Campus may be caused by several factors, such as lack of resources and funding, limited technical

expertise and support, resistance to change, and inadequate data management policies and procedures. This problem can have several negative effects, including difficulty in tracking OJT records and narrative reports, resulting in delays and inaccuracies, inefficient use of time and resources, inconsistencies in data, limited accessibility to OJT records and narrative reports, and the risk of losing or misplacing paper-based records. The specific causes and effects of this problem may vary depending on the context and circumstances of the situation.

A potential solution to the absence of a developed OJT Records and Narrative Reports Archiving System for Laguna State Polytechnic University, San Pablo City Campus is to implement a digital archiving system. The strategy for implementing this solution would involve several steps, starting with a needs assessment to identify the specific requirements of the system. Based on this assessment, the system would be designed and developed to meet the university's specific requirements, taking into account factors such as security, accessibility, and user-friendliness. Once developed, the system would undergo testing and evaluation to ensure functionality and effectiveness. Upon successful testing, the system would be implemented across the university with training and support provided to users as needed. The final step would be to monitor the system over time to ensure ongoing effectiveness and make any necessary improvements or updates. By implementing a digital archiving system, the university can improve the accuracy, efficiency, accessibility, and effectiveness of the OJT program, resulting in a more streamlined and effective process.

Project Purpose

The project to develop an OJT Records and Narrative Reports Archiving System for Laguna State Polytechnic University, San Pablo City Campus is important for several reasons. Firstly, it can improve the accuracy and efficiency of tracking OJT records and narrative reports. With a digital system in place, data entry and management can be streamlined, reducing errors and delays, ultimately resulting in a more efficient and effective OJT program. Secondly, it can increase accessibility to OJT records and narrative reports, allowing for more effective communication and collaboration between students, supervisors, and coordinators. This can lead to better-informed decision-making and improved overall program outcomes. Thirdly, a digital archiving system can ensure compliance with data management policies and procedures, reducing the risk of losing or misplacing paper-based records. This can ensure that the university meets the necessary standards for data management, improving the quality and effectiveness of the OJT program. Overall, the project to develop an OJT Records and Narrative Reports Archiving System is crucial for improving the accuracy, efficiency, accessibility, compliance, and effectiveness of the OJT program at Laguna State Polytechnic University, San Pablo City Campus.

To the Students Undertaking OJT

The students who undertaking OJT at the university will benefit from the improved accuracy and accessibility of their records, as well as the streamlined communication and collaboration with their supervisors and coordinators. This can

result in a more efficient and effective OJT program, providing students with a better learning experience and potentially improving their future career prospects.

To Supervisors and Coordinators involved in the OJT Program

They will benefit from the increased efficiency and accessibility of OJT records and narrative reports. This can make their roles easier, enabling them to better support students and provide more effective feedback.

The University as a Whole

They will benefit from the improved compliance with data management policies and procedures, reducing the risk of errors and delays, and enhancing the reputation of the university as an institution that prioritizes quality data management.

Project Objectives

General Objective

The general objective of the project is to develop an OJT Records and Narrative Reports Archiving System with Sentiment Analysis for Laguna State Polytechnic University, San Pablo City Campus.

Specific Objectives:

This study has the following objectives:

1. To design a web information system for the stakeholders involved in the OJT program, including students, supervisors, and coordinators.
2. To develop a website that has the following features:
 - a. To view student's information
 - b. To view submitted requirements
 - c. Can upload OJT records
 - d. Can upload narrative report
 - e. Can add, view, and update student's information
3. To test and evaluate the developed system; and
4. To document the developed system

Scope and Limitation

The scope of this study is to develop an OJT Records and Narrative Reports Archiving System specifically for the Laguna State Polytechnic University, San Pablo City Campus. The primary objective is to provide a centralized and streamlined management system for the data generated by the OJT program. The project will make use of the latest software technologies and best practices in database management to develop the archiving system, which will be designed to cater to the specific requirements of the OJT program at the university. The system will allow for easy access and utilization of data by students, faculty, and administrators, while also addressing the challenges faced by the university in

managing OJT records and narrative reports. The system will also measure and identify the emotion portrayed by the students when writing their narrative reports through the use of sentiment analysis.

However, this study also has limitations. The implementation and use of the system will be restricted to the Laguna State Polytechnic University, San Pablo City Campus and may not be applicable to other institutions. The project will not address any issues related to the hardware or infrastructure requirements necessary for the implementation of the system, and the study will also not cover the training of personnel or students on the use of the system. Despite these limitations, the development of the OJT Records and Narrative Reports Archiving System for the Laguna State Polytechnic University, San Pablo City Campus has the potential to significantly improve the management of OJT programs in higher education institutions, providing benefits for both students and educators.

Conceptual Model of the Project

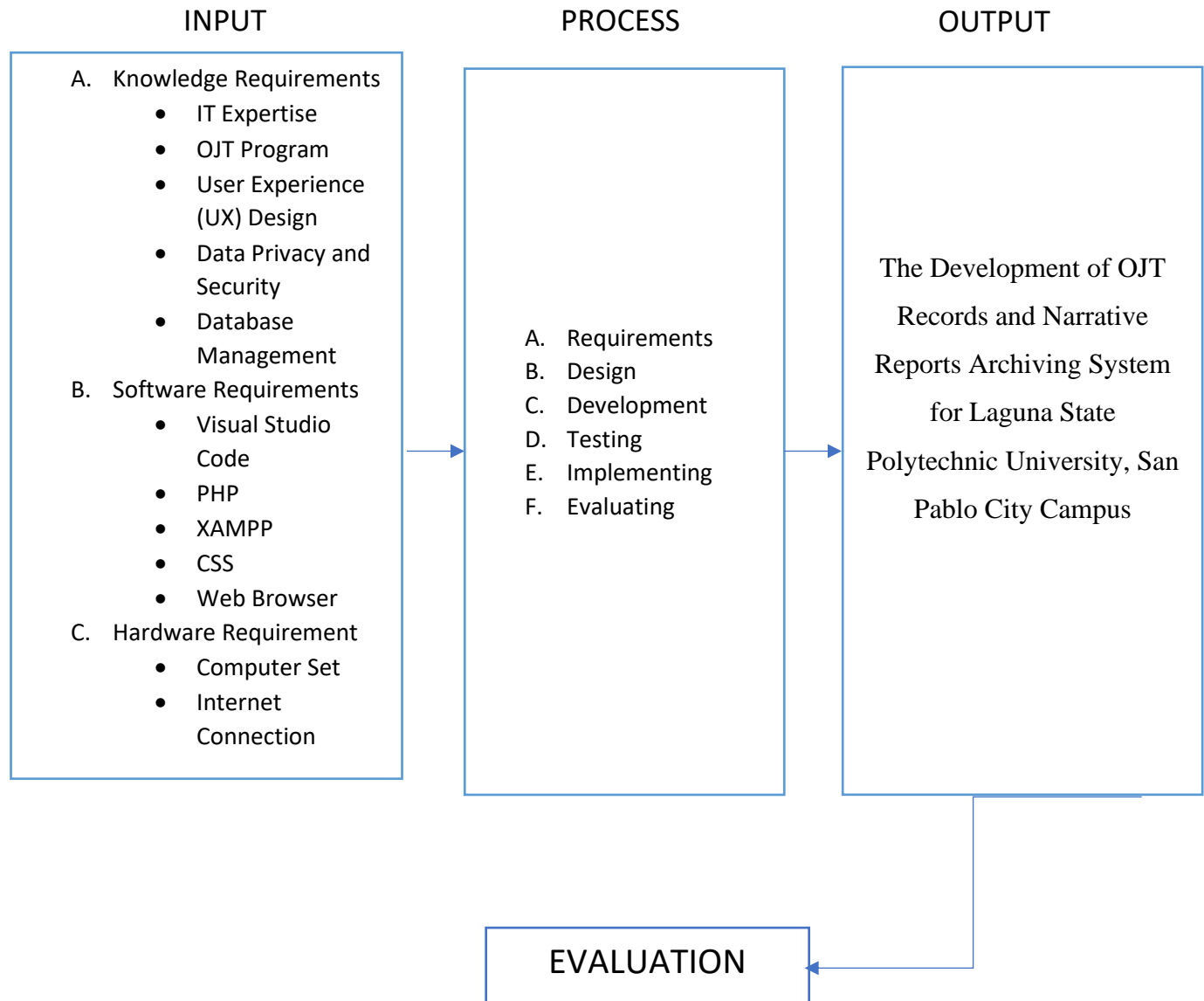


Figure 1: Conceptual Model of OJT Records and Narrative Reports Archiving System

The conceptual model of the project revolves around the development of an OJT Records and Narrative Reports Archiving System for the Laguna State Polytechnic University, San Pablo City Campus. The project will utilize database

management technologies and software development best practices to create a system that can manage OJT records and narrative reports efficiently. The system also consists of three main components: the database, the user interface, and the reporting system.

The database will serve as the main repository for all OJT records and narrative reports, including student profiles, and student information. The user interface will be designed to facilitate the easy and intuitive retrieval of information from the database, with features such as advanced search and filtering capabilities. Finally, the reporting system will enable the generation of customizable reports that can provide insights into the OJT program's performance, including metrics such as student completion rates.

The conceptual model also highlights the importance of addressing the challenges associated with managing OJT records and narrative reports in higher education institutions. By providing a centralized and streamlined system for managing OJT data, the project has the potential to improve the efficiency of the OJT program at the Laguna State Polytechnic University, San Pablo City Campus, while also providing valuable insights into the program's performance. The conceptual model of the study demonstrates the project's focus on using technology to enhance the educational experience and improve the management of OJT programs in higher education institutions.

Operational Definition of Terms

Administrator – the one that has all the access to the system

User - the one who can access the system and can upload their needed requirements

OJT Program – It refers to the on-the-job training program for students enrolled in the Laguna State Polytechnic University, San Pablo City Campus. The program provides students with the opportunity to apply their academic knowledge in a real-world setting to develop practical skills and gain work experience.

Archiving System – It refers to the software application that is designed to store and manage the OJT records and narrative reports of the students. The system should be able to organize, retrieve, and update the records efficiently and securely.

Narrative Report – It refers to the report submitted by the students summarizing their experience during their OJT. The report should include details about the tasks performed, skills acquired, and challenges encountered during the OJT.

Sentiment Analysis – can identify and measure the emotion expressed in a piece of text by the students in their narrative reports.

Chapter II

REVIEW OF RELATED LITERATURE AND STUDIES

The development of On-the-Job Training (OJT) records and narrative reports archiving system is a timely project that aims to improve the traditional manual system of record-keeping and archiving in Laguna State Polytechnic University (LSPU), San Pablo City Campus. This section reviews relevant literature and studies on OJT programs and the use of electronic systems in record-keeping and archiving.

Related Literature

In 1952, Baybay Provincial High School, a provincial high school, became the Laguna State Polytechnic University (LSPU). Three sections were set up at the start of the 1952–1953 academic year, two for freshmen and one for sophomores. It was the first public high school to open in Laguna's Baybay neighborhood.

In accordance with CHED Memorandum Order No. 27, S 2000, "Issuance of Implementing Guidelines of the Integration of CHED Supervised Institutions (CSIs) to State Universities and Colleges (SUCs) - Phase II," San Pablo City National School of Arts and Trades (SPCNSAT), now San Pablo City Campus, is located at Del Remedio, San Pablo City. On December 11, 2000, the formal handover occurred.

Archiving System

According to Stan Garfield (2018), the term "archiving system" has most frequently been used to describe certain systems that are in place to manage and record documents with ongoing value that are under the supervision of an archive institution. Moving files to a different storage medium for long-term retention is the process of archiving, which involves no longer actively using the contents. The organization nevertheless values archived files since they may be required for future reference or must be kept around for regulatory compliance. To make it simple to find and retrieve files, archives should be indexed and searchable.

Web Browser

As stated by TechTarget Contributor (2020), an application program known as a browser offers a way to see and engage with all of the content on the World Wide Web. Prior to the invention of the Web, the term "browser" was used to refer generally to user interfaces that enable you explore (navigate through and read) text files online. Web browsers are widely used today to access the internet and are virtually considered a requirement for how many people go about their everyday lives. A Web browser is a client application that, on behalf of the browser user, sends HTTP (Hypertext Transfer Protocol) requests to Web servers all over the Internet. E-mail and the File Transfer Protocol (FTP) are Internet protocols that can be used without a Web browser; instead, more specialized client programs are more common.

Web Page

A web page is a single document that can be browsed by a web browser. It is often written in HTML (Hypertext Markup Language). It is a document that combines text with photos, video, and other multimedia content, and it uses a variety of formatting and layout approaches to present the content in a systematic way. A URL (Uniform Resource Locator), which identifies the page's position on the internet, is used to view a web page. A web browser sends a request to the server hosting a web page when a user inputs a URL, and the server responds by delivering the page's HTML code back to the user's browser. (JavaTPoint, 2020).

Database Management System

Data is stored, retrieved, and analyzed using software called database management systems (DBMS). Users can create, read, update, and remove data in databases using a DBMS, which acts as an interface between them and the databases. Data can be changed or extracted by users and other programs thanks to DBMS, which manage the data, the database engine, and the database structure. Data security, data integrity, concurrency, and standard data management practices are all aided by this. By using the normalization database schema design technique, which divides a large table into smaller tables when any of its attributes have redundant values, DBMS optimizes the organization of data. DBMS provide a number of advantages over conventional file systems, such as flexibility and a more intricate backup system. (AppDynamics, 2020).

Information System

A combination of hardware, software, and communication networks make up an information system, which is used to gather meaningful data, particularly within an organization. Information technology is used by many firms to carry out and manage operations, engage with customers, and outperform rivals. Some businesses today, including Google, Alibaba, Amazon, and eBay, are entirely supported by information technology. (Emeritus, 2022).

Management Information System

An organization's activities are supported by a computer system called a management information system (MIS), which consists of both hardware and software. In order to support management decision-making, a MIS collects data from various online systems, analyzes the information, and reports data. (Shopify, 2022)

Development Tools

Visual Studio Code

According to Microsoft (2023), on your desktop, Visual Studio Code is a quick yet effective source code editor that runs on Windows, macOS, and Linux. It contains support for JavaScript, TypeScript, and Node.js built in, as well as a robust ecosystem of extensions for additional languages and runtimes (including C++, C#, Java, Python, PHP, Go, and.NET).

A web-based OJT Records and Narrative Reports Archiving System can be created using Visual Studio Code, which is a flexible tool that can be utilized in a

variety of ways. The online application's HTML, CSS, and JavaScript code can be written and edited using the code editor, which also supports a number of front-end frameworks. Back-end programming with server-side scripting languages like PHP, Python, or database systems like MySQL is also possible with Visual Studio Code.

PHP

A server-side programming language is PHP. That is employed in the development of Web apps or static or dynamic webpages. PHP, which formerly stood for Personal Home Pages, is now known as Hypertext Pre-processor. Only servers with PHP installed can interpret PHP scripts. Only a web browser is needed on the client machines to view the PHP scripts. (Guru99, 2023).

PHP can be used to develop dynamic web pages and handle form data because it is a server-side programming language. The OJT records and narrative reports can also be stored in databases like MySQL or PostgreSQL using this technique. The OJT Records and Narrative Reports Archiving System may benefit from PHP's breadth of security capabilities, such as prepared statements, input validation, and output escaping, which can help guard it against widespread web vulnerabilities like SQL injection and cross-site scripting (XSS).

XAMPP

Before releasing a website to the primary server, XAMPP enables a local host or server to test its website and clients via desktop and laptop PCs. It is a platform that offers an appropriate setting for testing and confirming the operation of projects based on Apache, Perl, MySQL, and PHP through the host's system. (JavaTPoint, 2022).

On their local computer, the researcher can install XAMPP and set it up to run the Apache web server and MySQL database. The researcher can then use PHP for server-side scripting and MySQL for database management to build and test the web application locally on their PC.

The researcher can utilize XAMPP to move the files to a web server, where the targeted users can access them, once the web application is ready for deployment. Moreover, XAMPP may be used to administer the web application on the server, including setting up Apache, controlling the MySQL database, and keeping track on system performance.

MySQL

The relational database management system MySQL is free and open-source. MySQL stores information in tables made up of rows and columns, just as other relational databases. Structured Query Language, or SQL as it is more frequently known, allows users to define, modify, control, and query data. MySQL is the most widely used open-source database system in the world and is a flexible and strong program. It's used to store and retrieve data in many well-known apps,

websites, and services as part of the widely used LAMP technology stack, which consists of a Linux-based operating system, the Apache web server, a MySQL database, and PHP for processing. (DigitalOcean, 2020).

The data for an online OJT Records and Narrative Reports Archiving System can be stored and managed using MySQL, a robust and well-liked database management system. The database schema can be created and managed with MySQL, and the system's acquired data can be stored there for later retrieval. The researcher can design a database schema that specifies the structure of the data to be stored in order to use MySQL for this project. Tables in this schema will be used to store OJT records, narrative reports, user data, and other pertinent information.

Hypertext Markup Language (HTML)

It is a common markup language used to create web pages. Using HTML components, such as tags and attributes, it enables the development and structuring of sections, paragraphs, and links. (Hostinger Tutorials, 2023).

In the context of the OJT Records and Narrative Reports Archiving System, HTML can be used to design forms for users to enter data. This data can be presented in a structured fashion using HTML tables, which makes it simple to study and evaluate. Moreover, HTML may be used to design an intuitive user interface that enables users to move around a web application and retrieve the data they require.

Cascading Style Sheet (CSS)

CSS, or Cascading Style Sheets, is a markup language that is used to style elements in markup languages like HTML. It divides the website's visual design from its content. While HTML serves as a site's very foundation and CSS handles all of the aesthetics for a whole website, the two are closely related. (Hostinger Tutorials, 2023).

The web application's user interface, including the menus, forms, and other interactive elements, can be styled using CSS. With the use of CSS, a web application may be made accessible to a wider audience of users by maintaining visual consistency across various web browsers and devices. Moreover, responsive design, which enables the web application to adjust to various screen sizes and orientations, may be made using CSS.

JavaScript

For the purpose of developing dynamic web page content, JavaScript is a scripting language. It creates things like dropdown menus, animated graphics, and dynamic backdrop colors to enhance how website visitors interact with online sites. (Hostinger Tutorials, 2023).

In the context of the OJT Records and Narrative Reports Archiving System, JavaScript can be used to validate form submissions, making sure that the user-submitted data is accurate and full. The user experience can be enhanced by adding interactive components like buttons, drop-down menus, and pop-up windows using JavaScript.

Review of Related Studies

E-Document Archiving System with SMS Support

Alpasan (2021) conducted a study for software development utilizing developmental research design and descriptive research design to determine if the objectives were achieved. The system was designed using an n-tier architecture and intended for deployment in the local area network of the IICS building. The system allows for electronic document upload and archiving by concerned faculty, with the Director able to download and print documents in real-time. A Short Message Service (SMS) Support feature was included to enable communication and notification of concerned faculty regarding required documents and submission deadlines. The results showed that the system facilitated real-time uploading and downloading of documents and was found to be effective, efficient, and appropriate for the needs of the users.

The study conducted by Alpasan and the proposed system share a common function, which is the ability to upload and download required documents. However, the proposed system is primarily designed for managing OJT records and includes a feature for monitoring the number of hours left to complete the required 600 hours of OJT.

Developing a Record Archiving System in Eastern Visayas State University -Buraen Campus

According to the study by Elpidio Villarosa (2019), the system that they developed aimed to address the challenges brought by paper-based records

management systems. It contained functions like easy retrieval and recording of data. Along with that, the system possesses a reliable database backup if ever accidents may arise. The system was composed of two phases, the analysis phase for identifying the needs of the system and lastly, the development of the archiving system.

Similar to the system developed by Villarosa, the proposed system incorporates features for easy data retrieval and recording, as well as a database backup function. However, the proposed system offers an additional advantage in the form of a data analysis feature, which can aid in identifying both strengths and weaknesses in the system.

The Digital Library and the Archiving System for Educational Institutes

Based on the study of Rahman and Alhaidari (2018), the system is for storing and retrieving educational content from a repository of books, e-books, journals, articles, and research theses. The suggested system organizes data in a systematic way and then uses filtration algorithms to match pertinent query phrases to extract meaningful information. Metadata is used to store quantitative information about the thing, and the full set of data is represented as a digital object in the digital library. The suggested architecture has been created with partitioning, parallelism, sharing, backup, and teamwork in mind. In terms of computational complexity, the suggested system's effectiveness and recall are contrasted with cutting-edge methods.

Both systems involve storing and retrieving data. The OJT records and archiving system, on the other hand, is specifically designed for the record keeping and archiving of on-the-job training (OJT) records and narrative reports for Laguna State Polytechnic University students. In addition, the OJT records and narrative reports archiving system includes access control, allowing only authorized users to access and update the records.

Intern-Net: Batstateu On-the-Job Training Online Portfolio System with Mobile Application

According to the study of Samonte (2018), by using the developed system, OJT Coordinators can easily update the interns and track their records by using the site, likewise the students can track their internship progress in the site supported by an android application, which is developed to provide faster services without opening a web browser. Likewise, industry partners were provided accounts for intern monitoring. The study aims to provide ease of applying for On-the-Job Training of student interns, better recording system during their internship and after their training. It will also help the OJT Coordinator to communicate with students who are enrolled in the program. A Company Representative has also their part in the system which is the approval of records and grading the enrolled students. By using the developed system, the Intern-Net can provide a better experience for the users of the system.

Regarding system functionality, both the system developed by Samonte (2018) and the proposed OJT records archiving system share common features such as record creation, updating, and retrieval, and narrative report generation.

However, Samonte's system provides an Android app that enables industry partners to monitor intern progress and approve records. Conversely, the OJT records archiving system is a web-based system that presents additional functionalities like data analysis and performance analysis.

Online Document Management System

Based on the study Noel, Yu, and Tagle (2019), the management system that they developed aims to facilitate the easy, organization and retrieval of user files with additional functionalities. These features include intelligent document searching named Search Folders, automated indexing and tagging termed Smart Indexing, and automated user-defined actions called Action Folders, while still retaining basic web-based file system capabilities. The study proposes the storage of all files and their corresponding metadata in a relational database, enabling efficient and prompt information retrieval. Upon file upload, pertinent details, such as file name, type, size, and upload date, will be gathered and saved together with the file in the database's file table.

In contrast to the study conducted by Noel, Yu, and Tagle (2019), the system provides record keeping, narrative report archiving, access control, and performance analysis features, enabling easy monitoring and evaluation of OJT activities. Moreover, the system displays the list of companies accepting OJT, while allowing users to view the remaining hours needed to complete the required 600 hours of training. The proposed system complements the OJT process by providing a streamlined process for tracking OJT progress and performance evaluation.

Online Thesis Archiving System for University of Makati

Aljane Gilles (2019) carried out a study that will make it easier for students, staff, and other people who might need theses to get them. As the system is online-based, users may access it from anywhere, including off-campus. Filling out a registration form is necessary for user registration, and the system will send an email for security purposes. The system's features include download choices, complete thesis and abstract previews, and search options. Users may see the most popular theses and store them offline by adding them to their profiles. The search tool allows filtering by title, author, topic matter, year submitted, and program title. The librarian will be in charge of running the system and will have the authority to post, remove, and amend theses. The dashboard shows data on things like the total number of users registered, the total number of theses submitted by colleges, the total number of views for each thesis, and the total number of abstracts seen.

Similar to the thesis archiving system developed by Gilles, the proposed archiving system for OJT records is also web-based. However, it has additional features such as a performance analysis tool and a list of companies that offer OJT placements. Furthermore, the system is capable of generating a narrative report, which sets it apart from Gilles' system due to its distinct focus on OJT records.

E-Word of Mouth Sentiment Analysis for User Behavior Studies

Based on the study Hui Li, Qi Chen, Zhaoman Zhong, Rongrong Gong, Guokai Han (2022), their focus has been on the categorization and sentiment

analysis of online customer reviews. In this thesis, a brand-new method for extracting and categorizing comments on online dating services (ODS) is presented. The study uses social cognitive theory to infer and extract the emotional concepts communicated in each review, departing from traditional emotional analysis, which mostly focuses on product features. Three machine learning methods are used to examine a sample of 4,300 dating website comments with highly negative or positive emotions.

A comparison of different sentiment analysis approaches, machine learning strategies, and dictionary-based sentiment analysis is used to gauge the effectiveness of user behavior research. On the other hand, the developers will use sentiment analysis to aid in the accuracy of the narrative reports that will be produced with the help of the system.

Jockeying for Position in CEO Letters: Impression Management and Sentiment Analytics

Based on the study Boudt and Thewissen (2019) this thesis examines the tactful use of favorable and unfavorable language in CEO letters as a method of impression management. According to the research, managers purposefully convey information such that the underlying message is perceived more favorably. The study reveals a grin-like pattern of positive words in the letter and a partial smile pattern in the distribution of negative words, with a concentration of more negative terms towards the letter's beginning. Additionally, a strong positive association between this type of qualitative impression management and the use of irregular accruals in earnings management is discovered by the research.

To address the manipulation of narrative structure, the thesis proposes sentiment analytics as a means of compensation. The introduced position weighted sentiment analysis demonstrates greater predictive power for the firm's performance in the following year.

Exploring Challenges and Opportunities in Internship Amidst Pandemic Using Sentiment Analyzer for Interns

Based on the study Payongayong and Palaoag (2022), The Covid-19 epidemic is the subject of this study, which focuses specifically on sentiment analysis and explores the experiences of IT, Business, and Accounting students during their internship programs. Data from 12 participants who completed their internships remotely were gathered by the researcher using a qualitative methodology. The sentiments provided by the students through online interviews and semi-structured questionnaires were noted, enhanced, and analyzed using Monkey Learn sentiment analysis.

Social Media Analysis of User's Responses to Terrorism Using Sentiment Analysis and Text Mining

Samah Mansour (2018) The Islamic State of Iraq and Syria (ISIS) has drawn attention from around the world due to its growth in those two countries as well as its ruthless treatment of people. There is still a lack of study, meanwhile, that looks at how people in Western and Eastern nations view ISIS, whether as a terrorist group that should be feared or from other angles.

This study uses text mining and sentiment analysis to explore potential discrepancies in attitudes against ISIS between people from Western and Eastern countries due to the extensive influence of social media, notably Twitter, which allows microblogging and content sharing.

CHAPTER III

METHODOLOGY

This chapter presents the methodology to be followed in this study. This includes the sections about Project Design, Project Development, and Testing and Evaluation Procedures.

Project Design

The diagrams below show how the development of the system works.

Flowchart

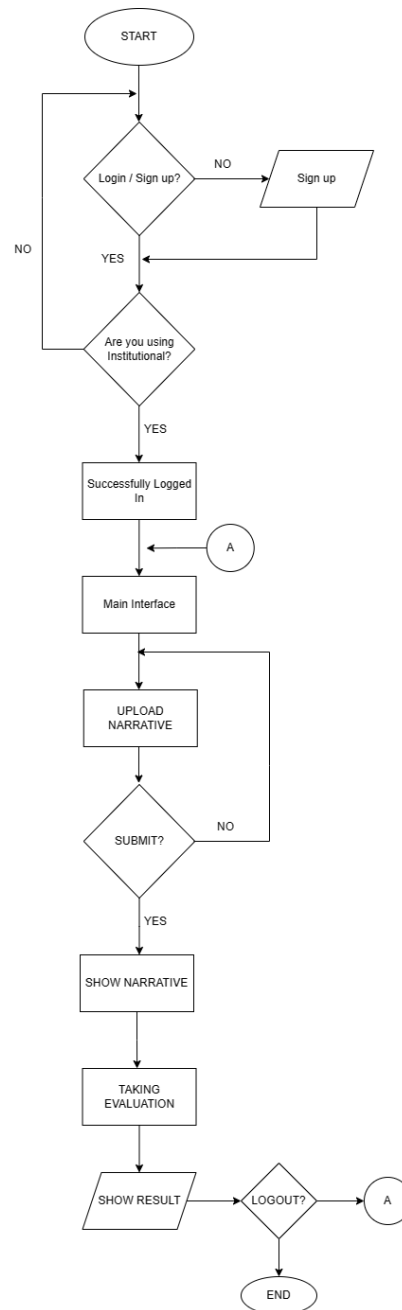


Figure 2. Flowchart of Narrative Report

Figure 2 illustrates the project's procedural flow. The flowchart begins with users accessing the system using their institutional account, where they are able to log in or sign up. Users are directed to the main interface once they have logged

in. They can then choose to upload their narrative reports to the system. Upon submission, the system offers feedback on whether or not the report was successfully submitted. In addition, during their on-the-job training (OJT), users require an assessment to assess their emotions.

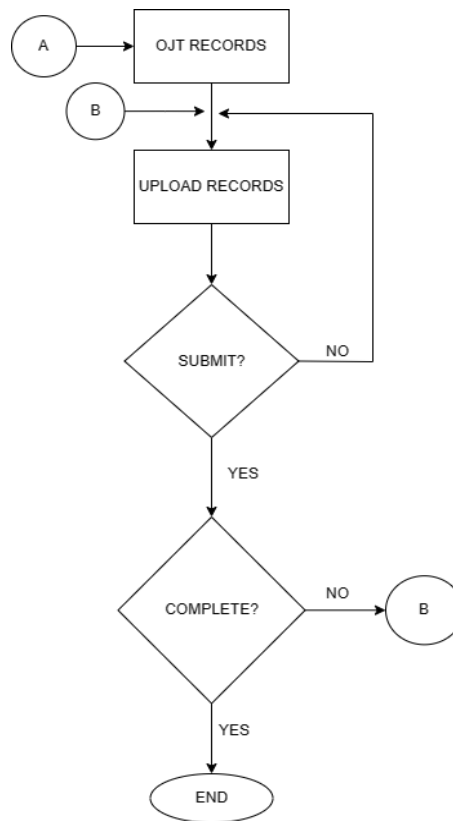


Figure 3. Flowchart of OJT Records

Figure 3 depicts the project's procedural flow. After logging in, users can proceed to upload the documents that are needed to complete their on-the-job training. Furthermore, users can view and edit their information within the system as well as access their submitted requirements.

Wireframe of the System

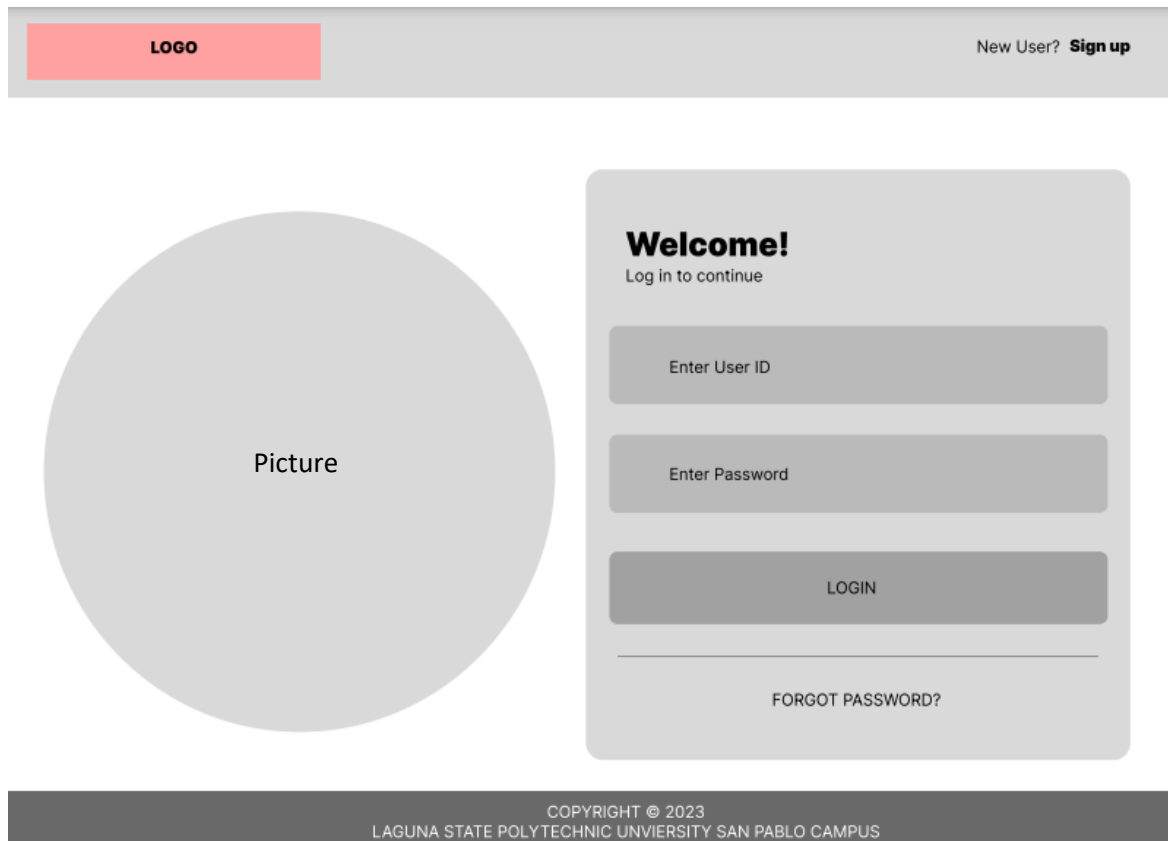


Figure 4. Login Page of the System

Figure 4 depicts the system's login page, which includes the Sign-up and Login buttons as well as hyperlinks for Forgot Password and User Email. Above the login is a welcome message that tells you to continue exploring. Additionally, a hyperlinked version of the logo may be seen in the top left corner.

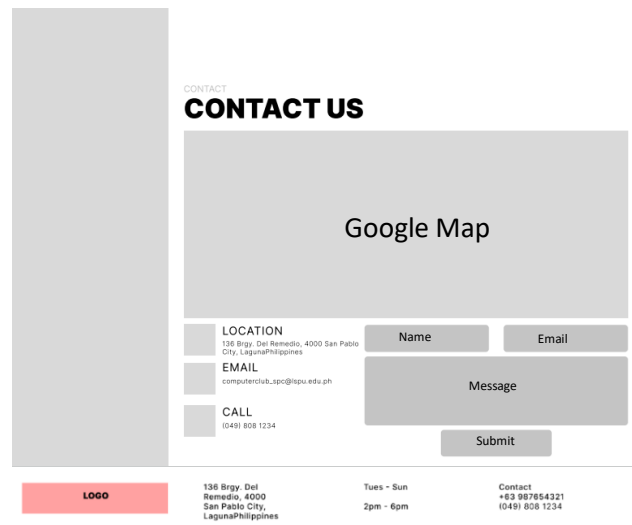
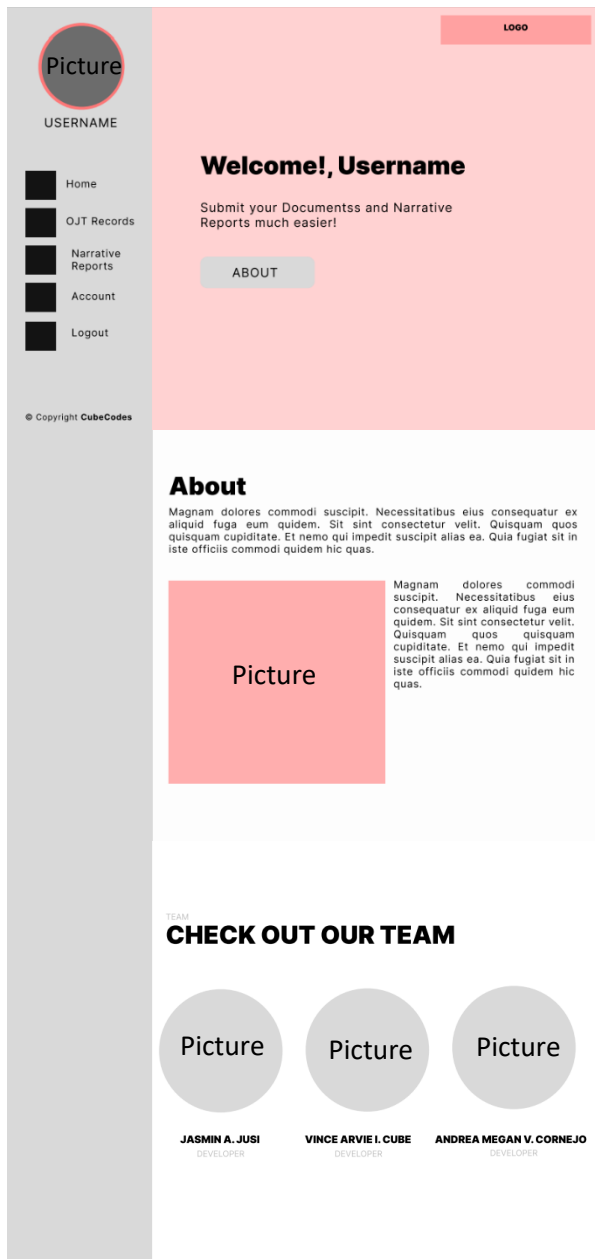


Figure 5. Home Page of the System

The system's home page after logging in is shown in Figure 5. The navigation menu is displayed in the top left corner and includes links for Home, OJT Records, Narrative Report, Account, and Logout. The user's name and profile

are also displayed on the left side. Furthermore, it includes a welcome statement and a succinct summary. There is an About button that leads users to a section that provides a summary of the system and is accompanied by an appropriate image or logo. The system's developers are highlighted further down the page in the developer section. The address, phone number, and email are included under the contact section. Users can enter their name, email address, and message in the contact form on the right side and then submit it by clicking the appropriate button. At the very least, the footer includes the logo and contact information, including an email address.

Figure 6. OJT Records Page of the System

The OJT Records portion of the system is shown in Figure 6 and can be accessed by clicking the OJT Records button on the navigation bar. The documents that have been submitted or that are necessary for the OJT process are displayed in this area. Users are provided with a button to upload required files, such as images and PDF files. Also accessible are buttons for saving papers as drafts and submitting all uploaded documents to the system for processing.

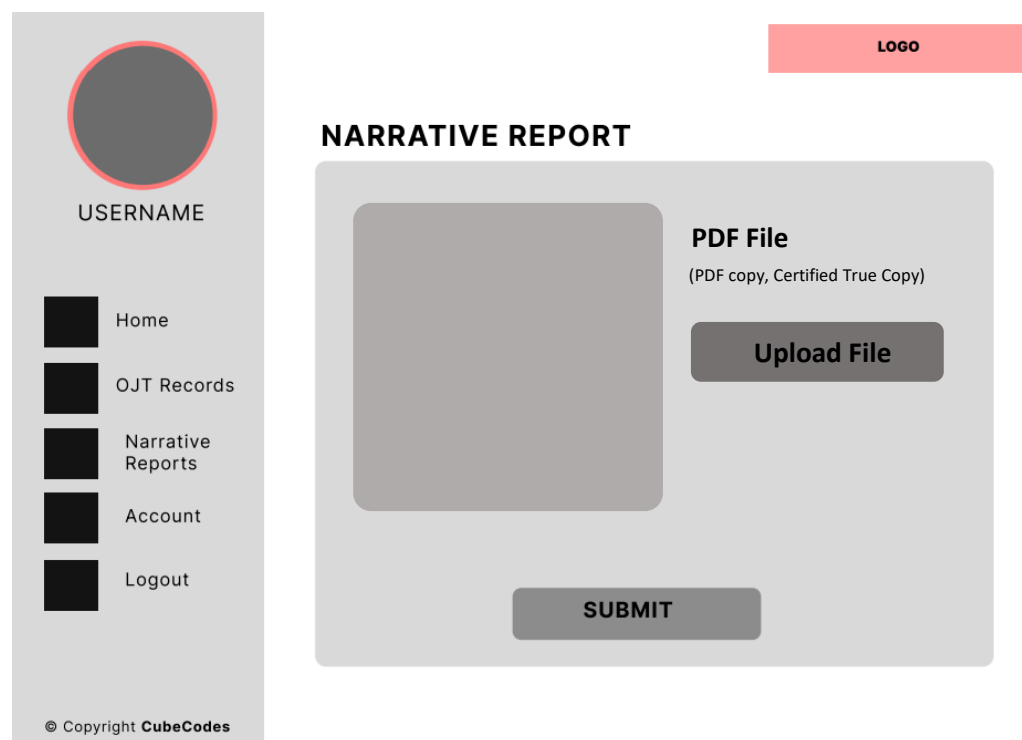


Figure 7. Narrative Report Page of the System

Figure 7 shows the narrative report tab that can be reached by clicking on it from the navigation bar's Narrative Report button. Two buttons are present on the page: one is for uploading the narrative report, and the other is for submitting

the submission in its entirety. The website also contains a piece of text that says that a PDF file is the only acceptable format for the report, making it clear to the user what kind of file to submit.

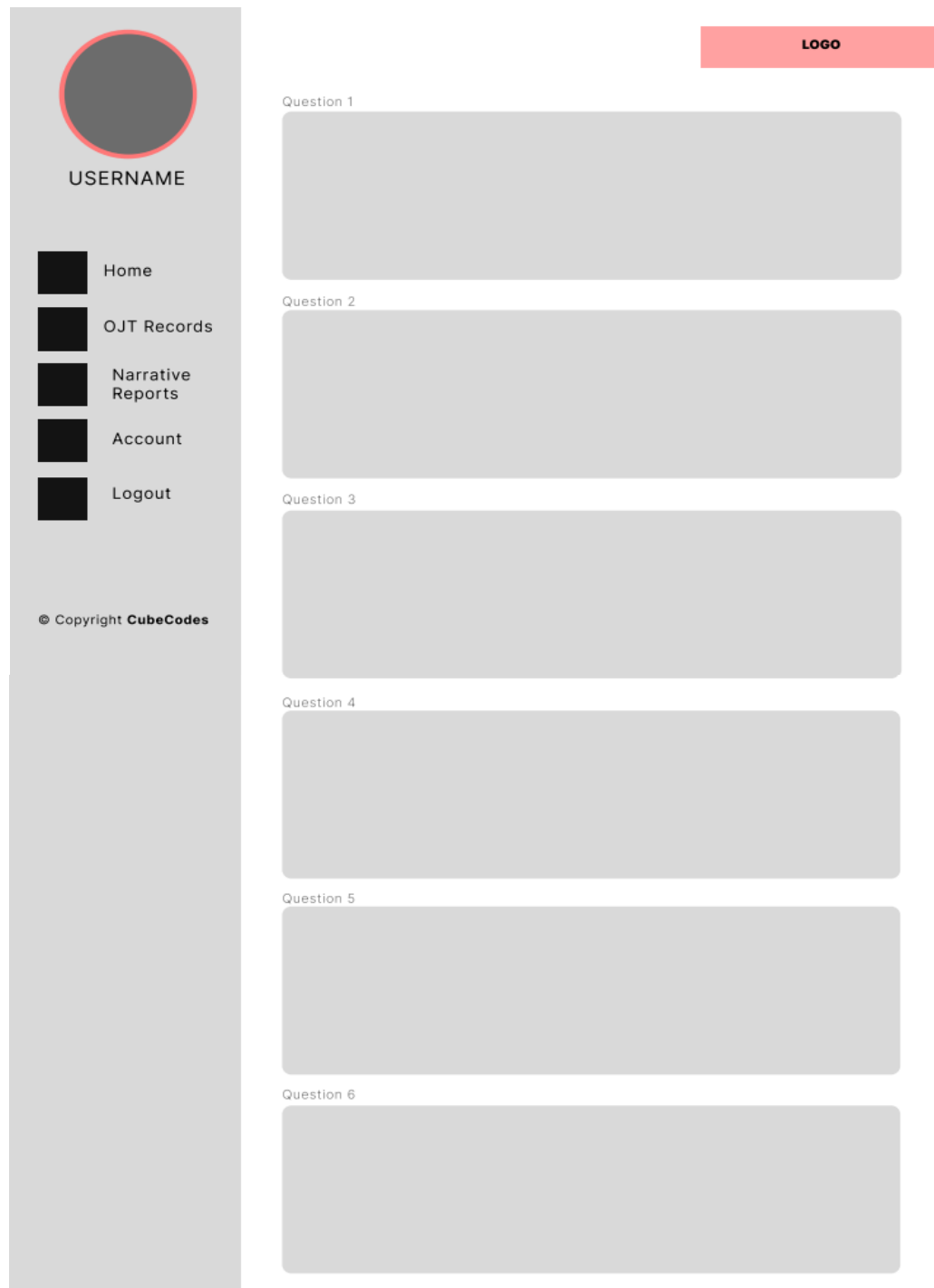


Figure 8. Sentiment Analysis Page of the System

After clicking or submitting the narrative report, the system's sentiment analysis page appears in Figure 8. The sentiment analysis must be completed by the user in order to determine if their feelings about their OJT experience are positive, negative, or neutral. You may see the evaluation's questions and response options on the Sentiment Analysis website.

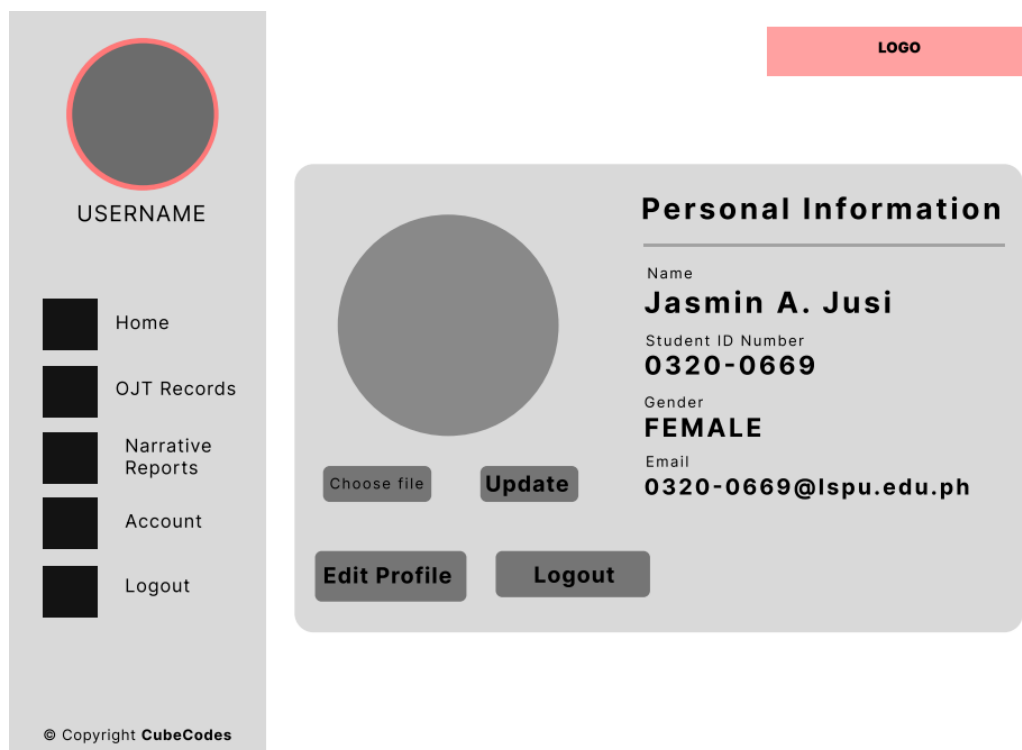


Figure 9. Profile Page of the system

Figure 9 depicts the system's profile page after you clicked the account option in the navigation bar. All of the users' exclusive data, including their name, student ID number, gender, and email address, appears on their profile page. The user's profile image is included in the area for pictures. Additionally, there are three buttons: a button for updating the profile image, a button for updating the personal information, and a button for logging out.

Use Case Diagram

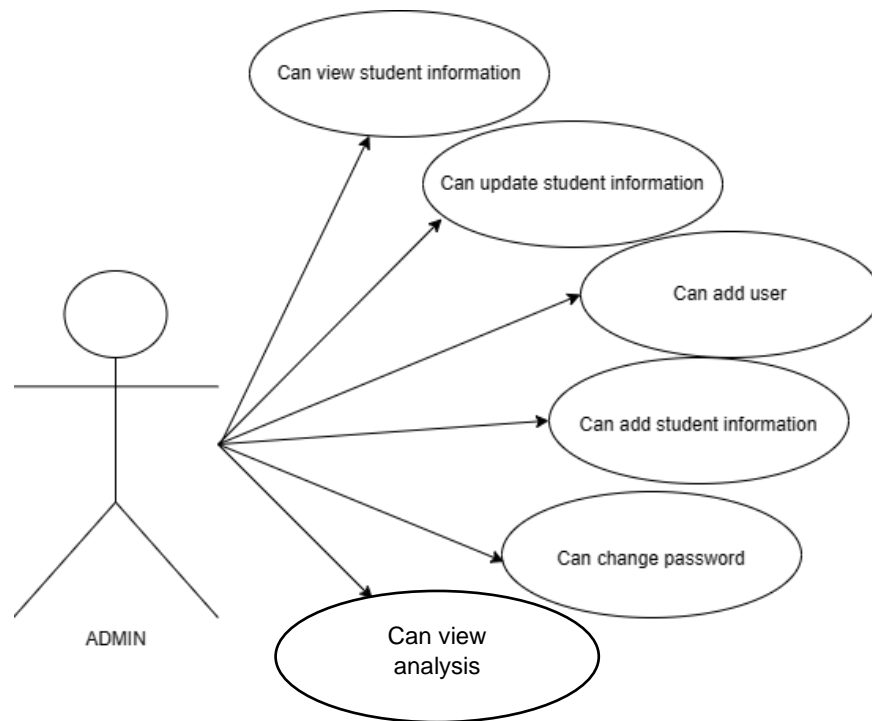


Figure 10. Use Case Diagram of Administrator of OJT Records and Narrative Report Archiving System

Figure 10 shows how the administrator may control the entire system. The administrator has access to all student information and is the sole authority that is allowed to edit student information. The illustration also emphasizes the administrator's capability to add user and student information. Furthermore, the administrator has the privilege to change the password for their account as needed. In addition, following the evaluation process, the administrator can assess the analysis.

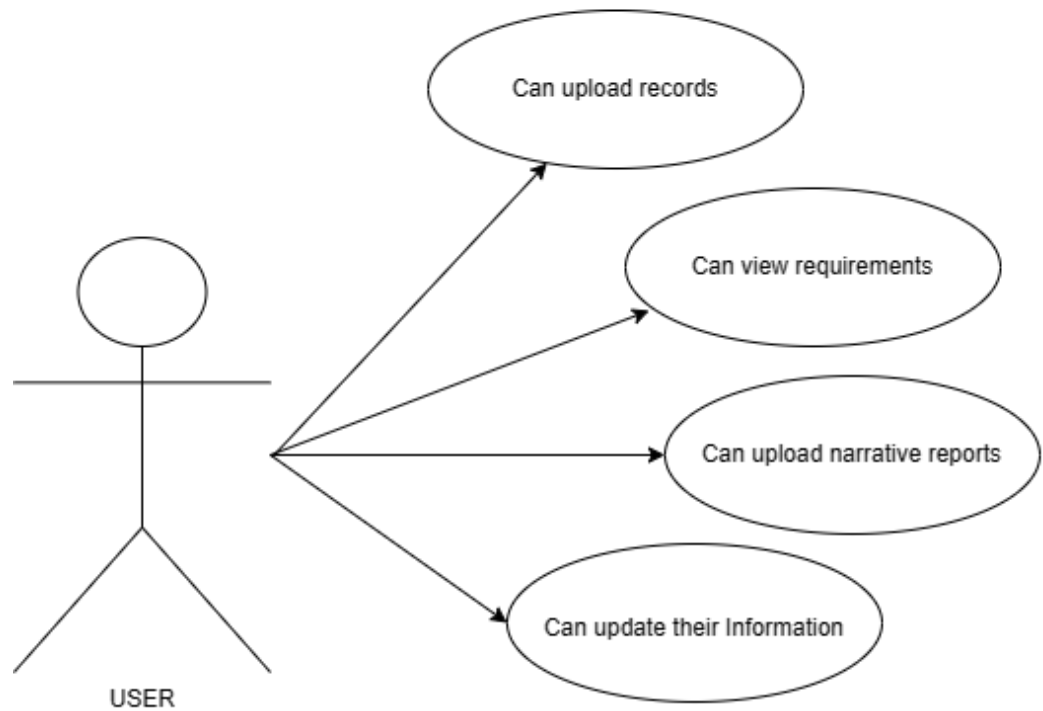


Figure 11. Use Case Diagram of User of OJT Records and Narrative Report Archiving System

Figure 11 depicts how users can make use of the proposed system. It demonstrates that users have the option to see their requirements as well as submit their information or records. Users can also update their personal information in the system and upload their narrative reports.

Project Development

A modified waterfall approach, which divides the software development process into different phases, was used to accomplish the project. The result of

one phase serves as the input for the following phase in the waterfall model, which has each phase move in a sequential order.

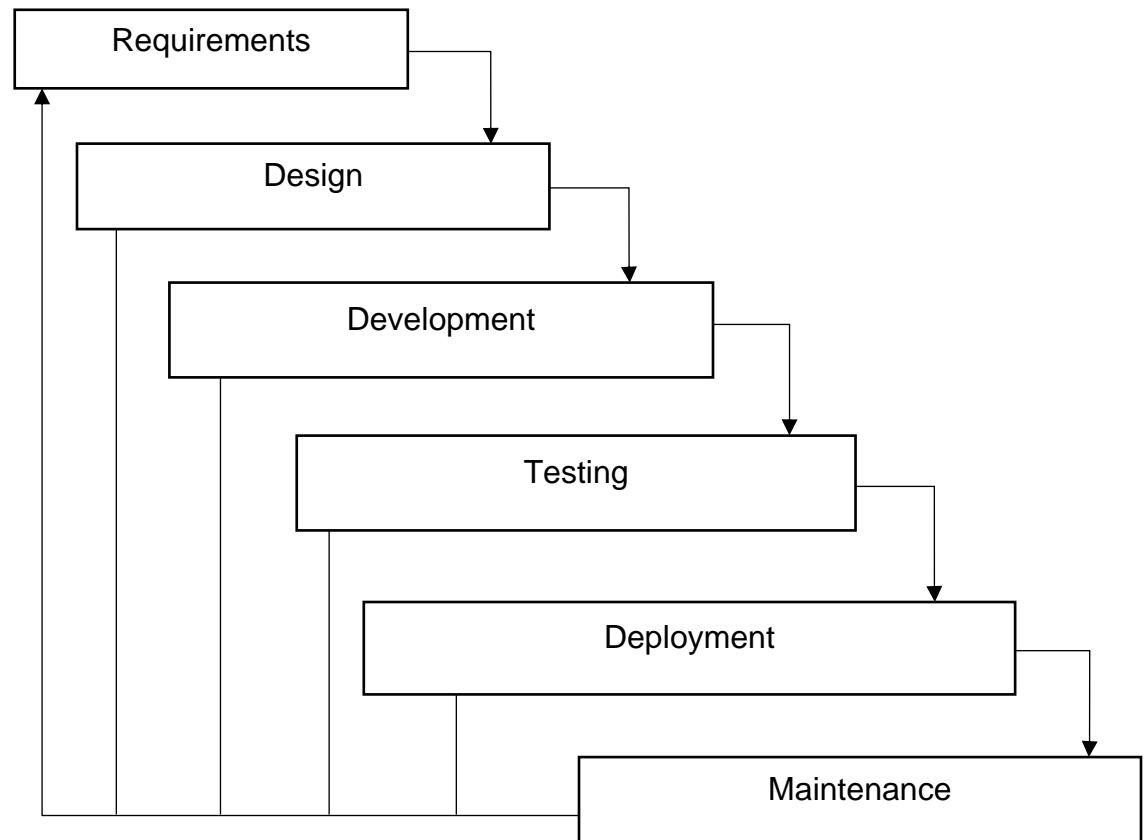


Figure 12. Modified Waterfall Model of OJT Records and Narrative Report Archiving System

Phase 1: Requirements

To gather all the necessary data for system development, the developers will conduct an interview and discussions with stakeholders, including OJT Coordinators, administrators, and students to gather comprehensive requirements. The information gathered will help the developers to define the

objectives and the requirements of the OJT Records and Narrative Report Archiving System. The developer will then have the opportunity to develop a website information system that could help them hold the records and information of the users of their archiving system.

Phase 2: Design

In this phase, the developers will create a high-level system design including flowcharts, wireframe for the interface of the system, and use case diagram for administrator and user. It helps serve as a guide for the developers to develop the system.

Phase 3: Development

This phase involves the development of actual coding of the proposed system. The developers will use different scripting languages such as CSS, PHP, HTML, and JavaScript. Developers will establish a connection and integrate the system with a database management system (DBMS) using MySQL.

Phase 4: Testing

The development team will collaborate closely with the stakeholders, including users, throughout this phase in order to gather feedback, address issues, and implement necessary enhancements. Before deploying the proposed system, this phase may require several iterations to refine the system and ensure its quality.

Phase 5: Deployment

After undergoing the testing phase, the system is ready to be deployed and used by the end-users. The developers will provide comprehensive training for the administrator on how to use the system, including its features, functionalities, and any specific procedures or workflows.

Phase 6: Maintenance

The last phase in the development of the system, during this phase the focus is on ensuring the smooth operation, stability, and continuous improvement of the OJT Records and Narrative Report Archiving System. The developers should regularly update and enhance the system. Also, the developers should have an effective- communication channels with users and stakeholders, this allows efficient reporting and resolution of issues, as well as gathering valuable feedback for further system improvements.

Project Testing and Evaluation

The system will undergo several testing types and phases to ensure the quality, functionality, and usability of OJT Records and Narrative Report Archiving System. It aims to identify and address discrepancies in the system before its proper deployment and to evaluate its performance against the specified requirements.

Functionality Testing

The developers will perform the testing to ensure that the system performs its intended functions correctly and meets the functional requirements of its users and stakeholders. With this, the developers will have an idea if the system is user-friendly and easily understood by the users and its stakeholders including administrator. By conducting comprehensive functionality testing, it helped the developers to know what does the system need to improve to meet its users and stakeholder's expectations.

Table 1. Functionality Testing

Test Case Description	Test Steps	Expected Result	Actual Outcome	Status
User Authentication	1. Login using institutional account 2. Did not use institutional account by logging in	1. User successfully logged in to the system. 2. User login denied.	Actual Outcome	Passed or Failed
Document Upload	1. Upload a valid OJT records file 2. Upload an invalid file format	1. File is successfully uploaded and saved. 2. System displays an error message and rejects the file	Actual Outcome	Passed or Failed
Information Viewing and Updating	1. View personal information	1. User's personal information is	Actual Outcome	Passed or Failed

	2. Update personal information	displayed correctly. 2. Changes are successfully saved and reflected in the system		
Report Generation	1. Generate an OJT report 2. Generate a Narrative report	1. System generates a comprehensive and accurate report 2. Narrative report is generated with correct content and format	Actual Outcome	Passed or Failed

The functionality testing table that will be utilized by the developers is shown in Table 1. The first column gives a succinct summary of the test case and details the functionality that is being tested. The sequential steps needed to run the test case are listed in the test steps column. It offers testers a simple, organized guide to refer to whilst doing the tests. The expected result determines the behavior of each test case. During testing, it acts as an objective against which the actual result is measured. The Actual Outcome column is filled out during testing to record the precise outcome obtained from executing the test case. The status column, the last column used to track the overall progress and status of each test case. It helps in identifying which test cases have passed or failed. If passed, the Expected Result is being shown in the Actual Outcome and if not, it is failed.

Browser Testing

The developers will use this instrument for browser testing to ensure that the system works properly across different web browsers. It will also be used to check if the system is responsive to different screen sizes when it is viewed on a chosen browser.

Table 2. Browser Testing

Web Browsers	Status/Compatibility	Actual Outcome	Recommended
Browser	Passed or Failed	Outcome	Yes or No

The browser testing table that will be utilized by the developers is shown in Table 2. The table's first column indicates which browser will be used for testing. The Status column is used to track the overall progress and status of each browser testing test case. It helps the developers to identify which test case have failed or passed. If Passed, the browser met the expected outcome and if not, the Status/Compatibility is failed. Failed test cases require further investigation and resolution to ensure that the system functions correctly across different browsers. Final column would be recommendation, if the specific browser met the expected outcome, the developers will then recommend that specific browser and if not, it will not be recommended by the developers.

Evaluation Procedure

System Usability Scale (SUS)

It provides a standardized and quantitative measure of the perceived usability of a system by capturing users' subjective assessments. Ten items compose the entirety of the SUS questionnaire, and every question is evaluated on a five-point Likert scale from strongly agree to strongly disagree. The assessments are intended to evaluate several usability characteristics, such as learnability, efficiency, and overall user satisfaction.

Table 3. Evaluation

1	I think I would like to use this system frequently.
2	I think the system was easy to use
3	I found the system unnecessarily complex
4	I think that I would need the support of a technical person to be able to use this system.
5	I found the various functions in this system were well integrated.
6	I thought there was too much inconsistency in this system.
7	I would imagine that most people would learn to use this system very quickly.
8	I found the system very cumbersome to use.
9	I felt very confident using the system.
10	I needed to learn a lot of things before I could get going with this system.

The table above shows the SUS questions that can be administered to a sample of users who have interacted with the system to gather their subjective feedback on its usability.

Table 4. Likert Scale System Usability Scales

Rating	Interpretation
5	Strongly Agree
4	Agree
3	Fair
2	Disagree
1	Strongly Disagree

The table above shows the criteria to be used to rate the usability of the system. The ratings breakdown for the responses is 5, which is considered as the highest point and 1 point for the lowest point. The responses to the ten items are combined to create a composite score that ranges from 0 to 100, which is used to determine the SUS score. The scores for the even-numbered things are deducted by 5, while the scores for the odd-numbered ones are deducted by 1. After adding together, the individual item scores and multiplying by 2.5, the SUS score is determined.

Project Evaluation Procedure

To determine the acceptability of the system, the developers will conduct the evaluation process using ISO/IEC 9126 for evaluating the system. ISO/IEC 9126 is a widely recognized framework for assessing software quality composed of functionality, reliability, usability, efficiency, maintainability, and portability. The system was evaluated by twenty-four (24) non-IT respondents and four (4) IT Professionals.

These are the characteristics that can be used for evaluating the system:

- **Functionality** – used by the developers if the system meets specified functional requirements and performs the intended tasks properly.
- **Reliability** – used by the developers if the system has the ability to perform consistently and reliably under various conditions, and its resistance to failures or errors.
- **Usability** – used by the developers to ensure the ease of use, intuitiveness, and efficiency of the system's user interface and interaction design.
- **Efficiency** – used by the developers to determine system's performance in terms of resource utilization, response time, and throughput.
- **Maintainability** – used by the developers to test with which the system can be modified and enhanced over time without introducing defects.
- **Portability** – used by the developers to test the system's ability to transferred to different platforms, allowing for ease of deployment.

Statistical Treatment of Data

To test the reliability of data, the developers will used a simplified numerical scale for evaluating software quality of the system.

Table 5. Numerical Scale of ISO/IEC 9126

Scale	Interpretation
4.51- 5.00	Excellent
3.51-4.50	Good

2.51-3.50	Average
1.51-2.50	Below Average
1.00-1.50	Poor

Table 5 presents the numerical scales that will be used to quantify and measure the quality for evaluating the system. 1.00 – 1.50 is interpreted as “Poor”, 1.51 – 2.50 is interpreted as “Below Average”, 2.51 – 3.50 is interpreted as “Average”, 3.51 – 4.50 is interpreted as “Good” and 4.51 – 5.00 is interpreted as “Excellent”.

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