Development of Web-Based Legislative Tracking and Archiving System of Local Government Unit of Solana

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Chapter I
INTRODUCTION

In the age of digital transformation, local government units (LGUs) play a pivotal role in serving their communities efficiently and effectively. However, many LGUs, such as LGU Solana, still rely on outdated manual systems for legislative tracking and archiving. This research investigates the challenges faced by LGU Solana in maintaining manual scripts for legislative tracking and archiving, and explores the need for a modernized system.

LGU Solana's manual script-based system for tracking and archiving legislative records represents a common problem faced by many LGUs across the globe. Without a dedicated digital platform, LGU Solana struggles to access and retrieve historical records efficiently. This not only consumes valuable time and resources but also increases the risk of errors, data loss, and mismanagement.

The absence of a centralized system for legislative tracking and archiving in LGU Solana underscores the urgent need for technological intervention. As the digital era progresses, embracing modern solutions becomes imperative for enhancing the effectiveness and transparency of governance processes. Implementing a digital system for legislative tracking and archiving would facilitate real-time access to legislative documents, streamline workflow processes, improve data accuracy, and enhance accountability.

This research aims to analyze the current state of legislative tracking and archiving in LGU Solana, identify the key challenges associated with manual systems, and propose recommendations for the adoption of a digital solution. By exploring best practices and case studies from other LGUs that have successfully implemented digital legislative tracking and archiving systems, this study seeks to provide valuable insights and guidelines for LGU Solana's transition towards modernization.

Moreover, in an era where transparency and accountability are paramount, manual systems can undermine public trust in government institutions. Citizens may question the reliability and accuracy of legislative records, leading to skepticism and dissatisfaction with the LGU's governance processes.

Addressing the problem of manual legislative tracking and archiving systems in LGU Solana requires a comprehensive and strategic approach. By leveraging digital technologies, such as legislative management software and document management systems, LGU Solana can provide its legislative processes, enhance data accessibility, and improve overall governance outcomes.

This research aims to explore the challenges faced by LGU Solana due to its reliance on manual tracking and archiving systems, analyze the potential benefits of transitioning to digital solutions, and

propose recommendations for a successful implementation strategy. By modernizing its legislative processes, LGU Solana can pave the way for improved efficiency, transparency, and public trust, ultimately fostering stronger and more responsive governance.

1.1 Project Context/Framework Basis

The foundation of the legislative tracking and archiving system for LGU Solana is built upon the principles of transparency, efficiency, and accountability in local governance. Recognizing the importance of streamlining legislative processes and ensuring easy access to historical records, this project aims to leverage modern technology to meet these objectives. By implementing a digital platform, LGU Solana can enhance its legislative workflow, facilitate public access to legislative information, and strengthen democratic governance at the local level.

At its core, the framework of this system revolves around the digitization and centralization of legislative documents and processes. This involves the development of a user-friendly interface that allows government officials to track the progress of proposed legislation, manage legislative documents, and streamline collaboration among stakeholders. Moreover, the system will prioritize accessibility by providing the public with a comprehensive archive of past laws, ordinances, resolutions, and meeting minutes, empowering citizens to actively participate in the democratic process.

The framework also emphasizes the integration of features that promote public engagement and feedback. By incorporating mechanisms for citizen participation, such as comment sections and notification alerts for upcoming legislative actions, the system encourages transparency and accountability in decision-making. Additionally, the framework will include provisions for data security and privacy to safeguard sensitive legislative information. Overall, this project seeks to establish a robust framework for legislative tracking and archiving that serves as a model for effective and transparent governance in LGU Solana and beyond.

1.2 Purpose and Description

The Legislative Tracking and Archiving System for LGU Solana is a pioneering solution aimed at revolutionizing the management of legislative processes within the municipality. With the primary purpose of enhancing efficiency and transparency, this system offers a centralized platform for tracking the progress of legislative initiatives and archiving historical records. By providing a seamless interface for legislators, administrators, and stakeholders, it streamlines workflow, reduces administrative burden, and ensures easy access to crucial information.

This system boasts a range of features including document management, workflow automation, agenda scheduling, and search capabilities. Through its implementation, LGU Solana aims to optimize legislative operations, facilitate collaboration among stakeholders, and

promote greater accountability in decision-making processes. By embracing this innovative approach to legislative management, LGU Solana endeavors to meet the evolving needs of its constituents and elevate the standard of governance within the municipality.

1.3 Objectives

1.3.1 General Objective's

This study aims to develop a web-based system that can effectively track and archive legislative processes and documents of LGU Solana.

1.3.2 Specific Objectives:

1. Create a centralized platform that provides easy access to up-to-date information on government proceedings.

2. Create a well as to establish a comprehensive digital repository for storing and organizing these legislative records.

3. Collaborate and have inter-agency coordination through cross-referencing and sharing of document repository.

4. Facilitate efficient communication and collaboration among stakeholders involved in the legislative process.

5. Ensure compliance with legal requirements and standards for document management and archiving.

1.4 Conceptual Framework of the study (IPO)

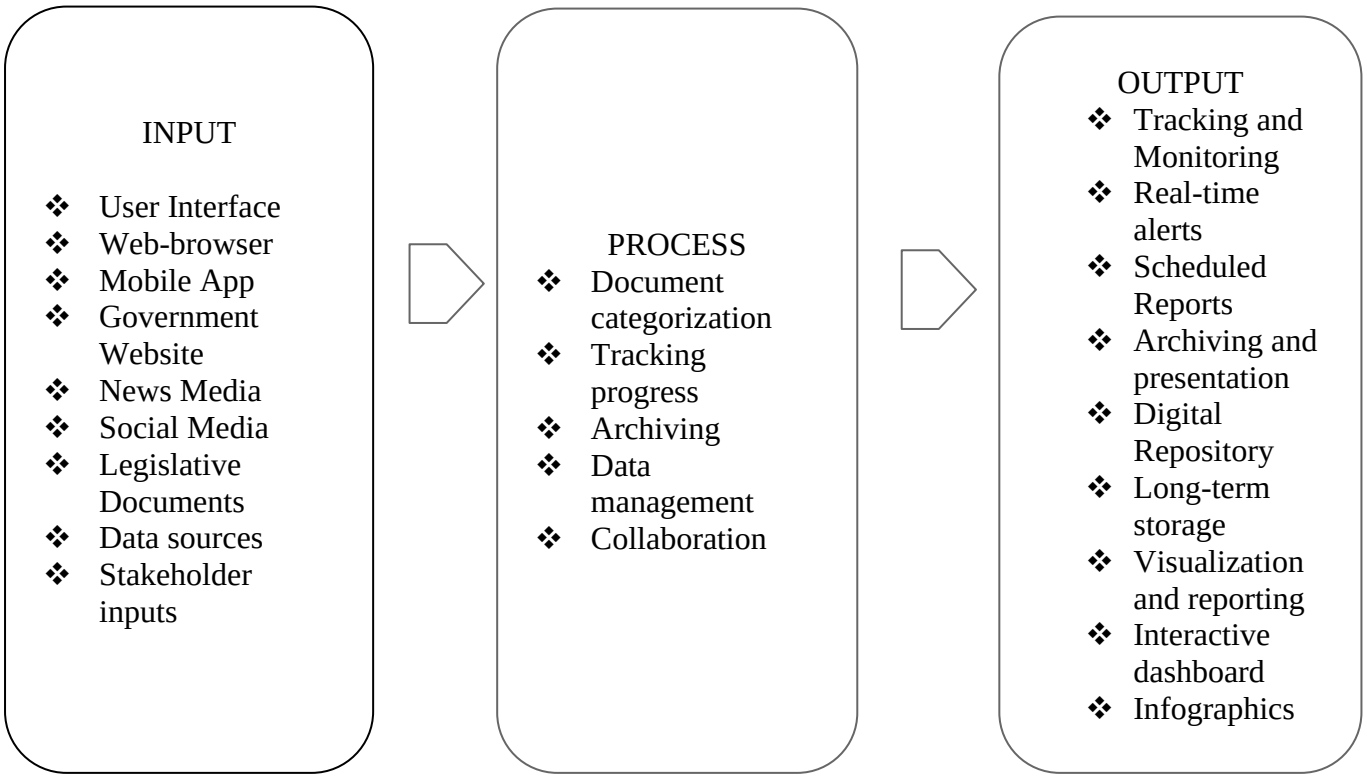

Figure 1. A web-based legislative tracking and archiving system allows users to input information about proposed legislation, such as bill text, sponsor details, and status updates. The system then processes this data, organizing and storing it in a searchable database. Users can then output reports, alerts, and other information about the tracked legislation, enabling them to monitor the legislative process.

1.5 Scope and Limitation of the study

The Scope and limitation of this study will focus on the development of a legislative tracking and archiving system of local government unit of Solana. The system would only be responsible for tracking and archiving legislative activities and records within the LGU of Solana. This would be including monitoring recording various types

of legislative actions, such as as proposed ordinances, resolutions, executive orders, storing published documents and legislative sessions.

Additionally, the system would also provide one central location for all archived legislative records, allowing for easy access and retrieval of information.

1.6 Significance of the study

Legislative office/LGU -Since they are in responsible of tracking and archiving the proposed ordinances, resolutions public hearing and meetings amendments and revisions to existing laws in their communities, the success of the initiative would greatly benefit them. They won't have to use the manual way, which is prone to mistakes, as the system will help them to their assignment.

Researchers -The project's success will advance their programming knowledge and abilities. They will be able to get reliable and practical information from the study's findings.

Future Researchers -their pursuit of their own legislative tracking and archiving system will be guided by the story.

Local Government Unit -this study will operate as a reference point for how to deliver comprehensive and efficient programs and services for support from the executive and legislative branches.

Legislators -the results offer the necessary knowledge regarding the legislative support required for the full implementation of the law at the local level.

1.7 Definition of Terms

In order to have a better understanding of the study, the researchers include the definition of terms to have a clearer understanding.

The following are the words used in the study:

Database: this is where member data is stored and organized.

Manual: Describes the outdated system employed by legislative office

Legislative Tracking: This entails keeping track of how bills, resolutions, and other legislative actions are progressing as they pass through the legislature.

Archiving: The process of archiving involves keeping legislative records and papers safe for future use.

LGU (Local Government Unit): An regulatory body responsible for monitoring and controlling local affairs in a certain area.

Chapter II

REVIEW OF RELATED LITARATURE

2.1 Foreign Literature

According to Ouma Malatji, Ngoako Solomon Marutha (2023) **Implementation of legislative framework governing records management throughout the life cycle in the Limpopo provincial government of South Africa,** This study aims to investigate a framework for implementation of legislative framework governing records management throughout the life cycle in the Limpopo provincial government of South Africa.The study revealed that the role of the provincial archives in enforcing compliance with legislative frameworks for the proper management of records was always disrupted by a lack of key resources such as staffing, for inspecting and training records-creating departments and working resources at the departmental levels.The study will serve as a resource or benchmark for archivists and records management professionals in the industry, as they count amongst the policymakers who find ways of monitoring, evaluating and enforcing compliance with the legislation governing proper records management.The proper implementation of recommendations from this study will lead to significant improvements in the management of records with enduring value, allowing them to finally be transferred to an archival repository to serve the public interest as heritage, national memory, or resources for researchers and authors, among-st others. In addition to Ngoako Marutha(2018) **The application of legislative frameworks for the management of medical records in Limpopo Province, South Africa,** Medical records management needs to be governed using a legal framework to avoid records being lost, modified, altered, misfiled and/or damaged, since that may result in a struggle to locate them and wasting time. Medical records management, like any other field, has to be guided by a sound legislative framework. The application of legislation in the management of medical records can help safeguard privacy and confidentiality and curb the loss, modification, alteration, damage and

misfiling of records. The study sought to assess the extent to which public hospitals in the Limpopo Province, South Africa apply legislation in the management of medical records. Quantitative data were collected using questionnaires completed by records management staff members in the hospitals of Limpopo. This study applied a quantitative research methodology and a survey research design. The study revealed that legal prescripts were not appropriately followed in the healthcare institutions due to a lack of fundamental resources. The study recommended, among other things, the provision of adequate resources and the appointment of suitably qualified records managers and staff or the development of staff capacity to ensure that appropriate legal frameworks are implemented adequately. However Tamás Váradi, Svetla Koeva, Martin Yamalov, Marko Tadić, Bálint Sass, Bartłomiej Nitoń, Maciej Ogrodniczuk, Piotr Pęzik, Verginica Barbu Mititelu, Radu Ion, Elena Irimia, Maria Mitrofan, Vasile Păiș, Dan Tufiș, Radovan Garabík, Simon Krek, Andraz Repar, Matjaž Rihtar, Janez Brank(2020) **The MARCELL Legislative Corpus,** This article presents the current outcomes of the MARCELL CEF Telecom project aiming to collect and deeply annotate a large comparable corpus of legal documents. The MARCELL corpus includes 7 monolingual sub-corpora (Bulgarian, Croatian, Hungarian, Polish, Romanian, Slovak and Slovenian) containing the total body of respective national legislative documents. These sub-corpora are automatically sentence split, tokenized, lemmatized and morphologically and syntactically annotated. The monolingual sub-corpora are complemented by a thematically related parallel corpus (Croatian-English). The metadata and the annotations are uniformly provided for each language specific sub-corpus. Besides the standard morphosyntactic analysis plus named entity and dependency annotation, the corpus is enriched with the IATE and EUROVOC labels. The file format is CoNLL-U Plus Format, containing the ten columns specific to the CoNLL-U format and four extra columns specific to our corpora. The MARCELL corpora represents a rich and valuable source for further studies and developments in machine learning, cross-lingual terminological data

extraction and classification. In addition to Maha Halalsheh; Ghada Kassab; Khaldoun Shatanawi(2021) I**mpact of legislation on olive mill wastewater management: Jordan as a case study ,** Olive mill wastewater (OMWW) management is becoming more challenging and a major environmental concern due to several factors including the very complex wastewater, which is considered one of the most difficult to treat. Seasonal production and small scattered family milling businesses have resulted in augmented management challenges. As the eighth largest olive oil exporter, Jordan is not an exception and faces some environmental and management concerns. The country had recently managed OMWW well; however, some issues need to be addressed in order to meet environmental requirements of the growing business. This paper aims at evaluating the Jordanian experience in OMWW management and recommends additional alternatives. OMWW shipping is controlled by a tracking system to designated disposal sites. However, weak enforcement of penalties results in violations. Moreover, current management practical options are limited in view of existing regulations since agricultural land application and decentralized management are discouraged. Legislative gaps are discussed and suggestions for a comprehensive revision established to allow for additional management alternatives. A revised legislative framework that takes into account resource recovery and the valorization of OMWW based on scientific evidence is highly recommended. However Emma Moghabghab, Kathleen Saville, Ira Allen(2021) **Flash Archiving the Writing Center: Snapshots from Lebanon and Egypt,**Composition studies in general, and writing center studies in particular, have developed an increasingly fulsome conversation about archives. Excellent recent work on the theory and practice of creating archives establishes best practices and rationales. Building especially on Stacy Nall (2014), we introduce "flash archiving" as a term and practice for what we call "good-enough archiving," an entry-point approach to archiving for harried writing center administrators and staff. Flash archiving mirrors the knowledge-making that is the de facto outcome of writing center practice: attuned

to ephemera in the midst of solving real-world writing dilemmas. The notion of flash archiving arises from our work as writing center administrators in Lebanon and Egypt and offers a less-than-perfect but nonetheless quite viable way of getting a snapshot of writing centers' relational work. Because community engagement is central to the meaning-making practices of writing centers, we trace out the logic for and practical uses of flash archiving as a way of capturing the relational "nonevents" that typify such engagement. The result is a form of knowledge-making and collective self-fashioning attuned to the constitutive vagaries of writing center work. According to Ana Koren, Ramjee Prasad, (2022) **Standardization of Third-party Data in Electronic Health Records,** With the increasing use of Electronic Health Records (EHR) and medical wearables and self-tracking devices, the volume and variety of health-related data grows exponentially and taking advantage of its potential would provide us with deeper insights and enable better healthcare decisions. 5G and, in the future, 6G will transform current IoMT network and allow for more improvements to QoS and general user experience. However, in order to use the data collected from IoMT in a formal clinical setting, data needs to be standardized, accurate, precise, and free of errors. Data must be stored in such a form that it is compliant with applicable standards and regulations. Standardizing and assuring data quality is especially important for third-party data, such as sensor-collected health data. This paper discusses requirements and potential solutions for using third-party data in EHR system, that today constitutes part of the central health information systems of most European countries. In addition to Nikiwe Momoti, Ngoako Solomon Marutha(2021) **Whoever Controls the Past, Controls the Future: Archives and Records Management Practitioners' Response to COVID-19 Pandemic in South Africa,** The World Health Organisation (WHO) declared COVID-19 a pandemic in 2020. Most countries around the world, including South Africa, have imposed national lockdowns. COVID-19 was declared a national disaster in South Africa in March 2020, in accordance with the Disaster Management Act, 2002. The

Act, among other things, recognises the importance of having access to reliable disaster information, as well as information management and communication systems for storing, disseminating, and exchanging information. Additionally, in April 2020, the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) issued a declaration calling for shared responsibility in preserving the documentary heritage that provides a historical perspective on how pandemics have been addressed in the past for future research. The declaration was supported by heritage organisations such as the International Council on Archives. This quantitative study used The UNESCO 2015 Recommendation Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form to investigate how members of the South African Society of Archivists responded to the COVID-19 pandemic in terms of preserving and providing access to documentary heritage. A structured web questionnaire was used to collect data. The study revealed that while some archives and records management practitioners' institutions had preservation, access, and disaster preparedness measures in place, others did not. From the findings, policy directions and a framework for records and archives management are proposed. However Nadezhda Kecheva(2021) **Current State of Archiving Archaeological Reports in Bulgaria: still more physical than digital,**This article provides an overview of the current state of archaeological archiving in Bulgaria. It briefly outlines the legislation that regulates archaeological fieldwork activities. Although the national legislation regulates the non-destructive and destructive activities equally, differences occur owing to the existence of the 'Archaeological Map of Bulgaria', a national 'sites and monuments' type of archaeological information system. Currently, online storage of brief data and information is possible for different archaeological sites. Its next version will be based on GIS and geographic features that allow storage of raw field survey data. According to the regulations, paper/digital reports of all fieldwork activities are collected yearly and copies of all of them are stored at the 'Scientific Archive' section at the

National Archaeological Institute with Museum at the Bulgarian Academy of Sciences. Although their digitisation is still in the early stages, the good news is that the centralised archaeological workflow regulates their storage in one place, which makes them more easily accessible. The annual publication of the 'Archaeological Discoveries and Excavations' series, with summaries for all fieldwork activities in the year, is also very useful for keeping track of the archaeological work and results. According to Moisés Rockembach, Anabela Serrano(2021) **Climate change and web archives: an Ibero-American study based on the Portuguese and Brazilian contexts,** The purpose of this investigation is to analyze information on the web and its preservation as the digital heritage of events related to climate change and the environment in Portugal and Brazil, thus contributing to web preservation in the Ibero-American context. A theoretical and applied investigation using mixed methods to collect and analyze qualitative and quantitative data from three sources: the Internet Archive and the public collection of Archive-It, the Portuguese web archive, and a selection from collections compiled by a research group (UFRGS) on web archiving and digital archiving in Brazil. Web archive initiatives started in 1996; however, over the years collections have narrowed from nationally relevant themes to specialized thematic niches. The theme “climate change” has had an increasing impact on scientific and mainstream discussion in the 2000s, and by 2010 the over-arching theme became focused on digital preservation of web content, as demonstrated in this study. Failure to preserve data can lead to a rapid loss of climate change information, due to the inherent ephemerality of the web. The paper demonstrates the relevance of preserving web content on climate change by showing what has been preserved to date and what will need to be preserved in the future. In addition to Tshepho Lydia Mosweu(2022) **A review of the legislative framework for social media records in Botswana,** The purpose of this paper to review the legislative framework for social media records in Botswana. The goal is to determine the extent to which the current legislation in Botswana covers the management of social media

records. This paper applied a qualitative research methodology and used documentary review method to collect data for analysis. The data collected was reviewed and organised into themes that cut across all the data sources to answer the main research objective. The findings of this paper show that the Botswana Government has made strides in reforming some legislation to address issues that rise with the continued use of the internet and cloud services in the country. However, a review of the legislation established that the reforms were not comprehensive enough for records generated on social media. The relevant subsidiary legislation also fell shot in filing this gap in the country's legislative framework. Research into the legislative framework for records generated on social media platforms in Botswana still needs more insights, specifically guidelines in the implementation of the current legislation in the country. The findings of this paper can be used by both Botswana and other governments, especially in Africa where there is limited research in the area, to better manage records generated through the use of social media with respect to relevant legislative frameworks. This paper is one of the first research contributions to review the legislative framework for records generated on social media in Botswana. However K. Ross, H. Winkler(2021) **Effective tracking of nationally determined contributions: A case study on South Africa,** The Paris Agreement's enhanced transparency framework requires that all Parties track and report progress toward their nationally determined contributions (NDCs). This paper develops a qualitative, multi-criteria framework that can be used to either design effective NDC tracking systems or evaluate the extent to which Parties are prepared for NDC tracking. The paper also applies the framework to a case study on South Africa, with results indicating that the country is progressing well in terms of selecting appropriate indicators, enacting legislation, and enhancing transparency. In areas of collecting data, reporting on socio-economic outcomes, and making changes in national policy, there is room for improvement, and the paper explores options to this end. Since South Africa has a relatively advanced system for tracking mitigation goals,

the findings of the paper suggest that other developing country Parties may require additional resources and capacity to track NDCs effectively.According to Savaş Selahattin Ateş, Mustafa Uzgör, Kemal Yüksek(2022) **UAV tracking module proposal based on a regulative comparison between manned and unmanned aviation,**The aim of this study is twofold. First is to compare manned and unmanned aviation regulations in the context of IACO Annexes to identify potential deficiencies in the international UAV legislations. Second is to propose a UAV monitoring module work flow as a solution to identified deficiencies in the international UAV regulations. Design/methodology/approach: In the present study, firstly the regulations used in manned aviation were summarized in the context of ICAO Annexes. Then along with an overview of the use of UAVs, international UAV regulations have been reviewed with a general perspective. In addition, a comparison was made on whether contents of ICAO Annexes find a place in common international UAV regulations in order to understand areas to be developed in the international UAV regulations, and to better understand the different principles between manned and unmanned air transport. In the last section, we present a UAV tracking module (UAVTram) in line with the above-mentioned comparison between manned and unmanned aviation and the identified deficiencies in the international UAV regulations. Findings: The international UAV regulations should be developed on the basis of airport airspace use, detection, liabilities, sanctions of violations, and updating of regulation. Proposed UAVTram has potential to offer real-time tracking and detection of UAVs as a solution to malicious use of UAVs.Research limitations/implications: Our study is not exempt from limitations. Firstly, we didn’t review all UAV regulations because it needs a considerable amount of efforts to check out all the UAV regulations pertinent to different areas of the world. It is the same case for manned aviation as we used only ICAO Annexes to contextually compare with UAV regulations.Practical implications: From the practical perspective, studies introducing new technologies such as systems that

help detection of remote pilots causing trouble and agile defense systems will give valuable insights to remove individual UAV threats. Originality/value: We didn’t find any study aiming to compare manned and unmanned aviation rules in search of finding potential deficiencies in the UAV regulations. Our study adopts such an approach. Moreover, our solution proposal here uses Bluetooth 5.0 technology mounted on stationary transmitters which provides more effective range with higher data transfer. Another advantage is that this work is projected to be supported by Turkish civil aviation authority, DGCA. This may accelerate efforts to make required real-time tests. In addition to Jennifer Hasselgård-Rowe(2021) **Detaining people who use drugs in Cambodia: A dual-track system,** Reports focusing on drug detention centres in Cambodia have predominantly been concerned with documenting conditions and human rights abuses in the government centres, while highlighting the failure of the Royal Government of Cambodia (RGC) to adopt a human rights and public health-based approach to substance use issues. They have not focused as extensively on the underlying institutional, legal and regulatory reasons that help explain, though not justify, the RGC's law-enforcement-based approach to illicit substance use in Cambodia. Therefore, this policy analysis examines Cambodia's legal and regulatory set-up, in particular how the criminal provisions of the laws governing substance use combined with the administrative mechanisms in place shape the county's drug-related practices. This paper is based on a wide-ranging literature review of primary legislative and interpretive material; international human rights, public health and drug control instruments; research papers and international reports from multilateral agencies, international non-governmental organisations, civil society and academic experts. Qualitative interviews were also carried out with key international agency, national and international NGO officers. By examining the Law on the Control of Drugs (2012), the RGC's main law covering substance use, as well as relevant administrative provisions, it becomes apparent that there are two parallel systems in place for sending people to drug detention centres in Cambodia: one based on criminal law and

the other through an 'alternative' administrative avenue. This division constitutes a structural fragmentation, or two 'parallel tracks', that provide law enforcement and other relevant RGC agencies with a wide sphere of discretion for how to address drug-related issues. The result is an enhanced risk of serious human rights violations for people who use drugs in Cambodia. However P. Zlatarov, G. Ivanova, D. Baeva, (2019) **A Web-Based System for Personalized Learning Path Tracking of Doctoral Students,** High-quality training of doctoral students for valuable and thorough scientific research imposes high academic standards. The new academic generation of young scientists needs to be trained in creativity, critical thinking and autonomous intellectual conclusions. Doctoral students need to find suitable conditions for work, so that they can become independent researchers who at an early stage take responsibility for the scope, direction and progress of their projects. This defines the main purpose of doctoral education, which needs to be led at a high academic and methodical level. The highly acclaimed and well-popularized doctoral information system, developed at the University of Ruse, provides a wide array of possibilities for personalized learning path tracking. This enables the status of each doctoral student to be determined accurately and timely. The software allows for keeping detailed portfolios for each participant, and makes generation of various progress visualization tools, such as reports and graphs, effortless. Generating reports quickly and efficiently is an important benefit, compared to the conventional manual methods widely used in educational institutions. The paper explores the developed software system, and provides some sample analysis based on personal learning paths of doctoral students enrolled in the recent few years. According to Xiong Ben Hai, Luo Qing-Yao, Yang Liang, Fu Run-Ting, Lin Zhao-Hui, Pan Jia-Rong(2020) **A practical web-based tracking and traceability information system for the pork products supply chain,** AbstractPork is the major dietary animal protein source of Chinese. The concerns on pork quality and safety have urged the China Administration to establish a tracking and traceability system for animal product safety through legislation. Based

on analysis of the factors that affect pork products quality, including inputs (vaccines, fodder, additives and veterinary drugs) and key control points during swine feeding, slaughtering and retail process, this study has developed a practical application platform consisting of a bar-code based data identification system, a data-record keeping system, correlated databases, and a data query interface. This application platform can meet the government's regulation and consumer demands by enabling the pork quality data to be collected and uploaded from different processes, and through inquiries interface terminals and a final splitting product tracing code, the safety information of the final farm and corresponding individual pig can be retrieved. The designed systems have already been deployed in Tianjin's two farms, with their associated abattoirs and retail supermarkets, indicating the methodology and its technical solution are applicable, and can be used to monitor the pork products supply chain from the farm to the dinner table

2.2 Local Literature

According to Christalyn B. Lapid; Alyanna Dawn S. Manuel; Arne B. Barcelo; Dianne Nicole M. Silva; Joerji Louis A. Ong(2021) **Legislative Information Resources Management for House Bills and House Resolutions in the Acquisition Department of the House of Representatives**, The government typically manages a lot of documents during their day to day operations. Aside from documents, it also requires a large amount of effort in monitoring the compliance of each employee in the government. Given the current problem, the researchers provided Configuration Management and Monitoring and Event Management [20] Information Technology Infrastructure Library (ITIL) frameworks to provide a systematic way of receiving, archiving, and transmitting vital government documents which are the House Bills and House Resolutions. With that, the researchers created the LIRM: Legislative Information Resources Management for House Bills and House Resolutions in the Acquisition Department of the House of Representatives. The development of the system was done

through the Agile methodology. This methodology was used for the purpose of saving time and acquiring continuous feedback and results during each sprint of the development. The local-based application was developed using PHP, Angular and other technologies that assures the system's performance, reliability, availability, and security. Tests performed were based on the [16] Institute of Electronics and Electrical Engineering (IEEE) standard for Software Test Documentation to make sure that the standards and acceptance criteria are met. In addition to Tiffany Lyn O. Pandes; Challiz D. Omorog; Regino B. Medrano (2018) **LeMTrac: Legislative Management and Tracking System,** Information and Communications Technology (ICT) have rationalized government services into a more efficient and transparent government. However, a large part of the government services remained constant in the manual process due to the high cost of ICT. The purpose of this paper is to explore the role of e-governance and ICT in the legislative management of municipalities in the Philippines. This study adopted the phases of Princeton Project Management Methodology (PPMM) as the approach in the development of LeMTrac. This paper utilized the developmental- quantitative research design involving two (2) sets of respondents, which are the end-users and IT experts. Majority of the respondents perceived that the system as "highly acceptable" with an average Likert score of 4.72 for the ISO 9126 Software quality metric Usability. The findings also reveal that the integration of LeMTrac within the Sangguniang Bayan (SB) Office in the Municipal Local Government Units (LGU) of Nabua and Bula, Camarines Sur provided better accessibility, security, and management of documents. However Jaymer M. Jayoma; Elbert S. Moyon; Edsel Matt O. Morales(2020) **OCR Based Document Archiving and Indexing Using PyTesseract: A Record Management System for DSWD Caraga, Philippines,** Small to large companies handle multiple forms of records every day. These organizations could use these records for historical, demographical, sociological, medical, or scientific research and serve as benchmarks to measure the organization's future activities and decisions. The Department of Social

Worker and Development (DSWD) Caraga continuously generates records daily. Still, their records management system is conventional, giving them a hard time retrieving and keeping track of the record's whereabouts. With this, DSWD Caraga embarks into record's digitization for its management to ensure the preservation of permanent and valuable papers, secured and accessible for future reference as required by the organization's different offices based on existing rules and regulations in records management. This paper endeavors to automate records classification using the open-source Python-Tesseract (PyTesseract) library, the wrapper for Google's Tesseract-OCR Engine. The process starts by converting paper-based documents into digital format (scanning) and then recognize and extract the text using the PyTesseract library. By integrating this library to Django and MySQL, management of record's classification, indexing, and archiving becomes easy. With the help of this system, record's safekeeping and retrieval bring comfort for the records officer. According to Cuevas, Lucky Amethyst M. & Casauay, Roderic P.(2022) **Electronic Document Archival System of STO. Niño National High School,** despite the snags and challenges of the manual operations, some of the public high schools in the Philippines, particularly those in the provinces, still do not use computerized systems for the development of the system itself is costly. One of the operations of the schools is the manual archiving of 201 files that contain employees' personal information and profile. As the files are hard-copy documents filed in cabinets and folders, there were incidents of loss of files, duplicate data- entry, unsecured storage, difficulty of retrieval and updating records. Oftentimes, these records are needed to be reproduced and updated for promotion and accreditation. This study, Electronic Document Archiving System (EDAS) was conducted to design, implement, and transform the manual keeping of records into a computerized system for the public high school. Using the Waterfall Model of system development, the system utilized the data gathered to identify the needs and solutions in transforming and upgrading the

Existing manual system. The development of the system resulted in a well- organized, uniformed, and easy to search records. Specifically, the electronic archiving system developed store records (documents) into a safer and secured database that can be retrieved easily and free from any damage. However, it should also be emphasized that the most efficient way to have a good process in keeping the records is to have organized manual operations aside from a computerized archiving system to automate it. In addition to Claude Roberto,Karen Anderson & Margaret Crocket(2021) **Translating the Universal Declaration on Archives: working with archival traditions and languages across the world,** The Universal Declaration on ArchivesFootnote1 (UDA) was developed to secure a global understanding and acceptance of the purpose, value and scope of archives and archivists as well as of records and recordkeepers. It promotes the role of archives and records management in protecting a whole range of human rights and in establishing collective memory, striving to ensure the preservation and universal accessibility of the world's documentary heritage. In so doing it covers access, digital records, good governance, preservation and conservation, appraisal, description, buildings, human rights, intellectual property, professional training, legislation and records management.

The principal audience of the UDA is specifically those who are not professional archivists: the Declaration was written by archivists for non-archivists. The word 'Universal' in the title points to the general public across every country, culture and language group. Therefore, it is important to ensure that the message about the importance of archives reaches as widely as possible across political and cultural boundaries, translated widely and carefully using words that help people to understand why archives need to be created and their rights of access to them.

This paper documents ICA's process for translation of the UDA and explores the difficulties that translators must resolve when translating

from English or French into languages that do not offer a direct translation for particular words or concepts either in their general vocabulary or in their own professional archival lexicon. Some of these challenges have been apparent from the time of the development of the UDA in English and French, but have not previously been shared in the literature. Archival terminology is highly developed and very specific in some cultures, particularly those that speak and write in the dominant European languages, but is often not so specifically developed in minority languages, or may even be absent. Usage of archival terminology is frequently not harmonised across languages, and varies according to how practice and theory have developed independently in each information culture. This inherent lack of clarity in comparative meaning and usage of archival terminology across languages, and particularly between English and French terminology, sets a major challenge before the translators. However Catherine A. De Castro & Errol G. De Castro (2022) **E-GOVERNMENT INITIATIVES OF LOCAL GOVERNMENTS IN THE PHILIPPINES,** Information and Communications Technology (ICT) played a vital role in local governance. Modern technologies and ICT applications were used to facilitate government transactions and enhance the delivery and quality of government services. This qualitative study aimed to identify the e-Government initiatives of the local governments of Sorsogon in the Philippines. Key informant survey, documentary analysis, and interviews with Planning and Development Coordinators and IT Focal Persons were conducted to determine the e-Government initiatives along with technology, human resources, linkages, and policies. Findings revealed that the e-Government initiatives of local governments were mostly done in partnership with National Government Agencies (NGAs). Along technology, some of the local governments established websites, developed information systems, and adopted online systems introduced by other government agencies. Along human resources, the e-Government initiatives were mostly seminars and training in collaboration with NGAs. Along linkages, the local governments

established a partnership with other government agencies such as the Department of Information and Communications Technology and the City Government of Legazpi. Only a few local governments partnered with the private sector and a higher learning institution for its e-Government program. Along policies, local governments passed resolutions and entered into a memorandum of agreements for their e-Government initiatives. With these, the local governments must sustain their e-Government initiatives and consider taking more steps towards successful e-Governance. According to Alexander A. Hernandez (2020) **Green IT Adoption Practices in Education Sector: A Developing Country Perspective,** Green IT is a resource efficient and effective consumption to reduce organizations processes impacts to the environment using information technology. This article aims to explore GIT practices of higher education institutions in the Philippines, where a qualitative multiple-case study is used. The study found that higher education institutions Green IT adoption covers the use of paperless and digital archiving systems, resource efficient IT equipment, responsible electronic waste disposal, recycling and reuse, and initiated awareness programs to educate the employees about Green IT and sustainability. The study also found that these practices are in its early stage of adoption in higher education institutions in the Philippines. This article also presents practical and research implications to further the uptake of Green IT in higher education institutions. In addition to Juan Michael Ladia | Shawn Adrianne Cuaresma | Denzy Rae Deynata(2023) **Web-Based Abacus Ship Management Asset Tracking and Order Processing with Decision Support System,** The Purchasing Department of ABACUS Ship Management Ltd, Manila provides assistance to all the vessels of ABACUS Ship Management handled by each respective Purchase Officer assigned per vessel. It also processes the ordering of supplies requested by each vessel that individually keeps track of each of its own inventory stocks to know which item should be ordered. The researchers were asked to develop a system that will address the current need of automating the current manual processes of ABACUS Ship Management Ltd. (Manila)

regarding their inventory flow, order tracking, receiving and issuance of orders, and generating annual historical reports of all the orders processed annually. Results of the evaluation indicated that the system had attained its objectives. Specifically, the study found that: the system can support the user to conveniently conduct and track an order and it allows multiple users to use the system at the same time; it can support the ABACUS personnel in identifying and selecting quotations from each suitable supplier; it can generate annual historical reports needed by the company to support them in tracking their transactions with each supplier; it can identify the remaining stocks of raw materials needed in creating purchase requests; it is reliable, portable, usable and maintainable and highly efficient. The researchers concluded that the developed system for the ABACUS Ship Management Ltd. Manila can help the personnel in keeping track of the inventory stock and all the orders. With the system providing a user-friendly interface, the Purchasing Department of ABACUS can immediately attend to the needs of the vessels through the notification system, automating its process and providing more accurate reports. The manual process currently being used can be replaced by the Asset Tracking and Order Processing with Decision Support System for ABACUS Ship Management Ltd. Manila. However, to further improve the developed system, the researchers recommended the addition of a notification system via SMS, chat and conversation feature for easy communication, and a function to automatically send a Request for Quotation (RFQ) to each supplier. The system was also suggested to be ported to a mobile application for easy access and portability. However Joanna B Emralino(2019) **PROJECT DOTS (DOCUMENT TRACKING SYSTEM): ITS EFFECTS IN THE INTER-OFFICES IN THE SCHOOLS DIVISION OF PARAÑAQUE CITY,** Document management has become a visible solution in any organizations. This assumption has enthused researchers to pay attention in developing document management system as part of technological emergence in the 21st Century. The current study is the development of an online system called Document Tracking System

(DoTS), which is adopted in the 12 inter-offices in the Schools Division of Paranaque City (SDO â€“ Paranaque City). The objective of the study was to create a tracking system in the SDO â€“ ParaÃ±aque City to help the inter-offices effectively manage documents. Its enabling objective is to create a ticket that could be used to tag user and online monitoring mechanism that allows the tagged user to view the ticket for faster compliance. In introducing DoTS in the SDO â€“ ParaÃ±aque City, brainstorming, interview of the different users with regard to the document processes they do, and an orientation and training of users on how to use DoTS as part of their function in their offices. A 13-item questionnaire was administered to 79 respondents after few months of employment of the DoTS in the inter-offices. Informal interview was done after having collected the questionnaires to employ probing technique to deepen the responses of the users. Findings revealed that negative reactions for some users were evident during the orientation and training stage of DoTS; on the other hand, after having experienced using DoTS, positive effects on their performances were manifested. Furthermore, some findings suggest that the employment of DoTS in the inter-offices in the SDO â€“ ParaÃ±aque City has improved the document management processes. Thus, majority of the users were convinced that apparent improvement was evident as it is seen the analytics of DoTS as one of its significant features. As far as the objectives of the study were concerned, the studyâ€™s enabling objectives were successfully achieved as seen from the data culled from the responses of the 79 DoTS users extracted from the administered questionnaire. It is recommended that DoTS could level up its usability down to the 42 public schools both from elementary and secondary levels under the jurisdiction of the SDO â€“ Paranaque to make document management system effective and efficient**.** According to John Carlo U. Ranoco | Dweena Maye V. Zamora | Raymond C. Espina(2022) **MaDox: A Digital Tracking and Scheduling System for the Dry Docking of Philippine-flagged Vessels,** The Philippine maritime industry is leaping towards advancements through technology solutions. To support this

movement, the MARINA Strategic Voyage Plan 2028, under Program 5, aims for the development of a Global Maritime Hub in the Philippines. This program entails spearheading research projects focusing on the innovation of maritime ancillary services that would involve Philippine flagged vessels, ship owners, local shipyards, and the Maritime Industry Authority (MARINA). Drydocking is one of the salient processes in the country's maritime industry. During this process, a vessel is brought to dry land to perform necessary maintenance and repair. As per the International Convention for the Safety of Life at Sea (SOLAS) requirements, all merchant vessels need a complete survey of the hull twice within a 5-year period and an intermediate survey within 36 months from the previous drydock. To adhere with these international SOLAS requirements, Philippine-registered ships need to be drydocked twice every five (5) years. The absence of a digital tracking and scheduling system causes the ship owners to have difficulties in overseeing their vessel's drydocking calendar as required by SOLAS. Since shipyards have a limited drydocking capacity, urgent drydocking appointments may pose scheduling problems on the side of the ship owners as to which shipyard would be readily available to provide immediate drydocking service. Likewise, shipyards would need to create changes to their working schedules to accommodate these urgent drydocking appointments. These rush appointments also tend to have lacking vessel plans and documents needed to start the drydock as scheduled which results in further delays. With this problem in mind, the authors propose to design and develop a digital tracking and scheduling system for the drydocking of Philippine-flagged vessels. The provision of such a system would optimize the ship drydocking process and would further lead to more efficient operations in boatyards, shipyards, and in the maritime industry in general. In Addition to Noreen Jemima D. Gonda | Moses R. Ching | Darlene Fed C. Libatique | Shekaniah V. Solapco | Estela P. De Vera (2021) **PHax Track: An Android-based Immunization Tracker Mobile Application for Makati City Health Institutions,** Vaccine documentation is currently limited to manual

data recording making accomplishment reports prone to errors (Department of Health, USAID Philippines, & Engender Health, 2016). Furthermore, the present COVID-19 situation requires a focus on management of immunization data. Hence, a working mobile android application was developed aiming to improve documentation of immunization activities and Adverse Drug Reaction (ADR) reporting. The mobile application was tested to determine the degree of acceptability, and level of usability and effectiveness among patients vaccinated in Makati City, and healthcare professionals affiliated with Makati Health Institutions. As well as identifying strengths, limitations and technical errors encountered by the respondents. This study utilized quantitative research involving three phases: orientation, implementation, and evaluation. PHax Track uses Firebase to record and store data, and manages user accounts. It has a Patient Record Page for tracking and monitoring patientâ€™s vaccination records, and ADR Reporting Page where patients can report any adverse event following immunization to respective healthcare professionals. From the results, high acceptability, and high usability and effectiveness were obtained with mean scores of 3.64 and 3.81, respectively. According to the feedback of respondents, PHax Track is user-friendly, has achieved its purpose, and has an appealing design. However, respondents encountered minor and technical errors, and pointed out limitations like lack of interactive features and need for internet connectivity. Recommendations for future enhancement were collected. Overall, the PHax Track is deemed acceptable, usable, and effective which denotes that it can be applied in tracking immunization records of patients. However Airah Venice Casipit | John Dredd Patrick Guardian | Alfie Bernardo | John Lester Encina(2023)**An Android App for Realtime Tracking of Bio-Research Product Testing Status for Bio-N Production and Utilization for Agricultural Crops,**The University of the Philippines Los Baños has the National Institute of Molecular Biology and Biotechnology (BIOTECH). Bio-N is a microbial-based fertilizer composed of microorganisms (bacteria) isolated from the roots of talahib (Saccharum spontaneum). The

bacteria can convert atmospheric nitrogen (N2) into a form usable by rice, corn and vegetables to enhance shoot growth and root development. The biotech UPLB supervises and monitors the field-testing activity. Their testing reports are manual prepared and it takes a lot of time and effort to manually supervise the out-going activity of monitoring all the results issued to Project leader and field personnel. These reports were prone to data loss and miscalculations due to mismatching of the incoming and outgoing reports. In relation to that, the researchers developed an android app for real time tracking of bio-research product testing status for Bio- N production and utilization for agricultural crops to generally enhance the flow of their transactions and improve the management of their annual reports. The system has a feature of a decision support function to help the admin easily analyze the reports made by the system. Based on the results, the study concluded that the system met all the study's objectives and its acceptance was already determined. Generally, the respondents strongly agreed that the system had attained the main objectives. According to Carl Mathew L. Replan | Remmelt C. Tamisin | Jim Pearl P. Victoriano(2022) **MCU-Based Anti-Theft Displacement Sensors using GPS-WIFI Tracking System with Item Identification via Android Application,** This project designed a wireless anti-theft device with a GPS-WiFi tracking feature which can be monitored through an Android application. The proponents created a wireless displacement sensor with a swappable independent power source using lithium ion batteries with supporting boost converter, which allows any item chosen to be monitored without the need for plugging it in. It also eliminates false alarms with the use of a limit switch used as a trigger which is pressed on the surface of the item being monitored and is kept intact by neodymium magnets or double adhesive tape. Removing the displacement sensor from the item it is attached to triggers the limit switch, alarms the piezo buzzer then sends the notification to the Android device. The prototype combined GPS-WiFi tracking technologies to ensure consistent indoor-outdoor signals using a microcontroller with a built-in WiFi module and a GPS module with a

built-in ceramic antenna. This research work relied on applied, analytical, and experimental methods for prototype testing. The proponents tested the prototype resulting in different statuses like Connected, Disconnected, No Update and Signal Error. It was tested near Letran - Calamba, within the Letran main lobby, McDonald's (Bucal Calamba branch) and Bernardo Village in Los Baños. The maps showed on the Android Application. Future studies can further develop the prototype's design by improving battery integration with wireless charging, creating a better grip of the prototype for the monitored item, improving user interface, and by improving the consistency of the GPS signal using a more advanced module available in the market. In additon to Rexel U Sabran(2020) **Biomimetic Solar Tracking for Optimized Photovoltaic Power Generation,** Different tracking strategies were developed to optimally align the photovoltaic panel with the direct beam of solar radiation to maximize power generation. Among the various strategies, the ones providing the highest accuracy employ sun pointing sensors. However, its accuracy is affected by varying weather conditions that resulted in poor tracking performance which adversely affected power generation. A sensorless approach using the factors that drive the heliotropism of sunflowers was developed to track the sunâ€™s position. The tracking strategy used the combination of current measurements and astronomical equations to track the sun accurately and reliably. A single-axis biomimetic solar tracking prototype was developed to measure the strategyâ€™s tracking performance in terms of accuracy, reliability, and power generation. The results of the 4-day experiment showed that the biomimetic tracking system reliably located the sunâ€™s position under clear, partly cloudy, and cloudy conditions with a high degree of accuracy; that resulted in the improvement of power generation by an average of 23.57% as compared to a fixed tilted system. The results confirmed that the sensorless approach that utilized the combination of current measurements and astronomical equations is an effective strategy in accurately and reliably tracking the sunâ€™s position under various weather conditions that optimized photovoltaic power

generation. However Charles Alfred A. Cruz & Francis F. Balahadia (2023) **Province of Laguna Legislative Management and Tracking System with the Application of Latent Dirichlet Allocation (LDA) Algorithm,** The legislative branch of a province is generally in charge of making laws. In addition to this, they are also in charge of enacting programs and policies for the general well-being of the citizens within the province. The general public may not be able to keep track of legislative performances since there is a growing number of legislative-generated documents. This study developed a system that integrated the application of topic modeling in crafting ordinances, resolutions, and policies for the Province of Laguna.

2.3 Synthesis

LGU Solana still uses old-fashioned manual methods for tracking and archiving legislative documents. This study looks into the difficulties this causes and why there's a push for a more up-to-date system. Many LGUs worldwide face similar challenges with manual systems, like Solana's reliance on paper records. Without a digital system, Solana finds it hard to access past documents quickly and accurately. This wastes time and money and raises the chances of mistakes and lost data.

These chalenge has greatly affect to the legislative office , it consumes valuable time and resources to retrieval of archived documents and also increases the risk of errors, data loss, and mismanagement. Its difficult to track in a manual way of tracking the legislative actions.

2.3.1 Similarities and Differences

In manual way of tracking and archiving can leads to data loss and prone to errors.

According to Airah Venice Casipit | John Dredd Patrick Guardian | Alfie Bernardo | John Lester Encina(2023)**An Android App for Realtime Tracking of Bio-Research Product Testing Status for Bio-N Production and Utilization for Agricultural Crops,**The University

of the Philippines Los Baños has the National Institute of Molecular Biology and Biotechnology (BIOTECH). Bio-N is a microbial-based fertilizer composed of microorganisms (bacteria) isolated from the roots of talahib (Saccharum spontaneum). The bacteria can convert atmospheric nitrogen (N2) into a form usable by rice, corn and vegetables to enhance shoot growth and root development. The biotech UPLB supervises and monitors the field-testing activity. Their testing reports are manual prepared and it takes a lot of time and effort to manually supervise the out-going activity of monitoring all the results issued to Project leader and field personnel. These reports were prone to data loss and miscalculations due to mismatching of the incoming and outgoing reports. In relation to that, the researchers developed an android app for real time tracking of bio-research product testing status for Bio- N production and utilization for agricultural crops to generally enhance the flow of their transactions and improve the management of their annual reports. The system has a feature of a decision support function to help the admin easily analyze the reports made by the system. Based on the results, the study concluded that the system met all the study's objectives and its acceptance was already determined. Generally, the respondents strongly agreed that the system had attained the main objectives.In addition to Cuevas, Lucky Amethyst M. & Casauay, Roderic P.(2022) **Electronic Document Archival System of STO. Niño National High School,** Despite the snags and challenges of the manual operations, some of the public high schools in the Philippines, particularly those in the provinces, still do not use computerized systems for the development of the system itself is costly. One of the operations of the schools is the manual archiving of 201 files that contain employees' personal information and profile. As the files are hard-copy documents filed in cabinets and folders, there were incidents of loss of files, duplicate data- entry, unsecured storage, difficulty of retrieval and updating records. Oftentimes, these records are needed to be reproduced and updated for promotion and accreditation. This study, Electronic Document Archiving System (EDAS) was conducted to design, implement, and transform the

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Existing manual system. The development of the system resulted in a well- organized, uniformed, and easy to search records. Specifically, the electronic archiving system developed store records (documents) into a safer and secured database that can be retrieved easily and free from any damage. However, it should also be emphasized that the most efficient way to have a good process in keeping the records is to have organized manual operations aside from a computerized archiving system to automate it.

According to Nadezhda Kecheva(2021) **Current State of Archiving Archaeological Reports in Bulgaria: still more physical than digital,**This article provides an overview of the current state of archaeological archiving in Bulgaria. It briefly outlines the legislation that regulates archaeological fieldwork activities. Although the national legislation regulates the non-destructive and destructive activities equally, differences occur owing to the existence of the 'Archaeological Map of Bulgaria', a national 'sites and monuments' type of archaeological information system. Currently, online storage of brief data and information is possible for different archaeological sites. Its next version will be based on GIS and geographic features that allow storage of raw field survey data. According to the regulations, paper/digital reports of all fieldwork activities are collected yearly and copies of all of them are stored at the 'Scientific Archive' section at the National Archaeological Institute with Museum at the Bulgarian Academy of Sciences. Although their digitization is still in the early stages, the good news is that the centralized archaeological workflow regulates their storage in one place, which makes them more easily accessible. The annual publication of the 'Archaeological Discoveries and Excavations' series, with summaries for all fieldwork activities in the year, is also very useful for keeping track of the archaeological work and results.

Chapter III

TECHNICAL BACKGROUND

3.1 System Requirements

To develop a web-based legislative tracking and archiving system requires hardware, software, and people-ware. Using the right hardware and software during system development will speed up the process. The hardware, software and people ware is displayed in the tables below.

3.1.1 Hardware

Processor	**AMD A9-9420 RADEON R5, 5 COMPUTE CORES 2C+3G 3.00 GHz**
RAM	**8.00 GB (7.46 GB usable)**
Storage	**464GB**
Other	**Other required standard computer peripherals**

3.1.2 Software:

Operating system	**Windows 10 Home 22H2**
IDE	**Sublime Text 3 and VS code**
Programming language	**HTML, CSS, Bootstrap, PHP and JavaScript**
Database Server	**MySQL 8.0**

Web Server	**Xampp 8.2.4**
Internet Browser	**Google Chrome, Microsoft Edge**

3.1.3 People ware

System Analysis	**Gather requirements, design system architecture, and ensure the system meets user needs.**
Developers	**Code the system based on design specifications.**

3.2 System Architecture

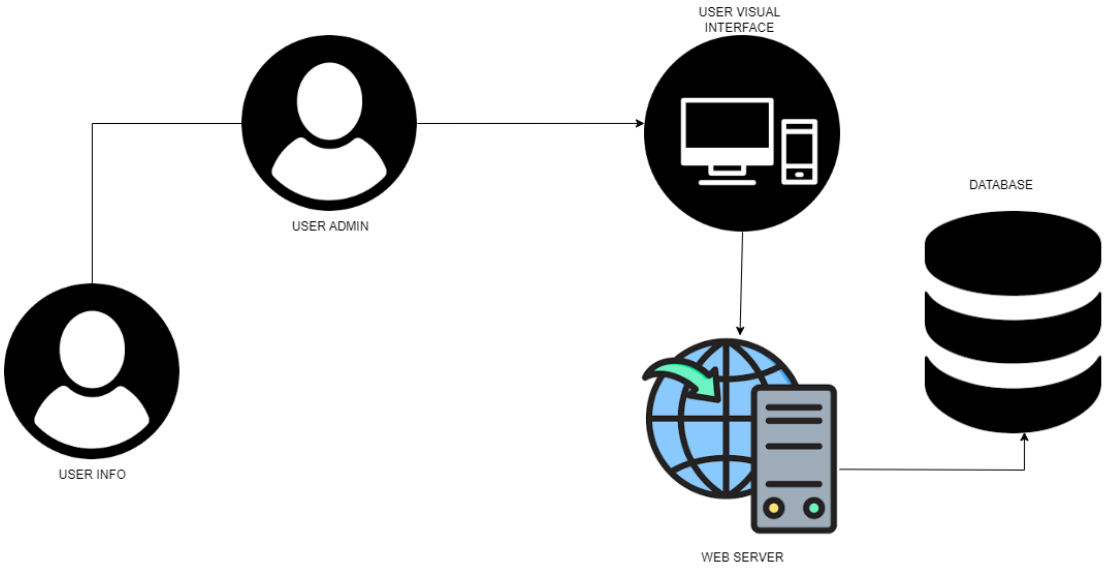


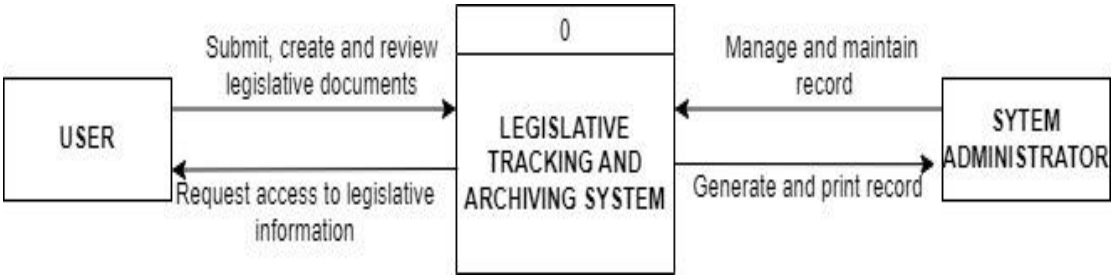
Figure 2. This system architecture gives a clear picture of how the various parts of our web application work together to provide a smooth

user experience. Each component, from the user interface to the webserver and the database has specific responsibilities.

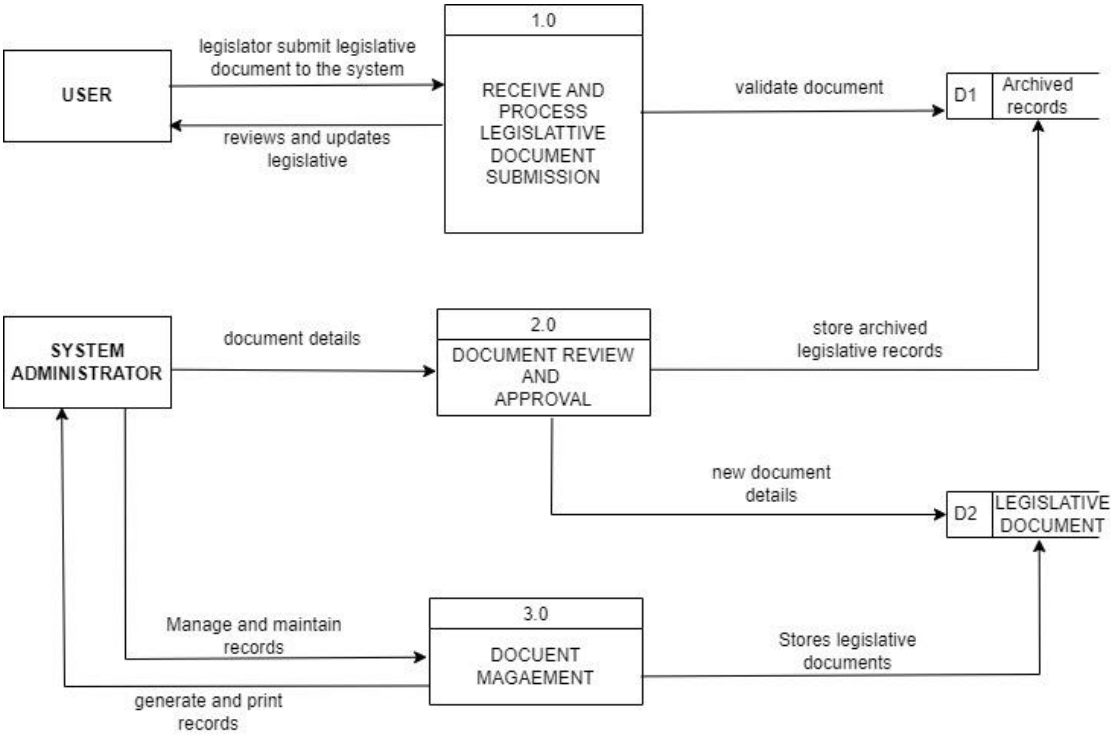
Chapter IV

RESEARCH METHODOLOGY

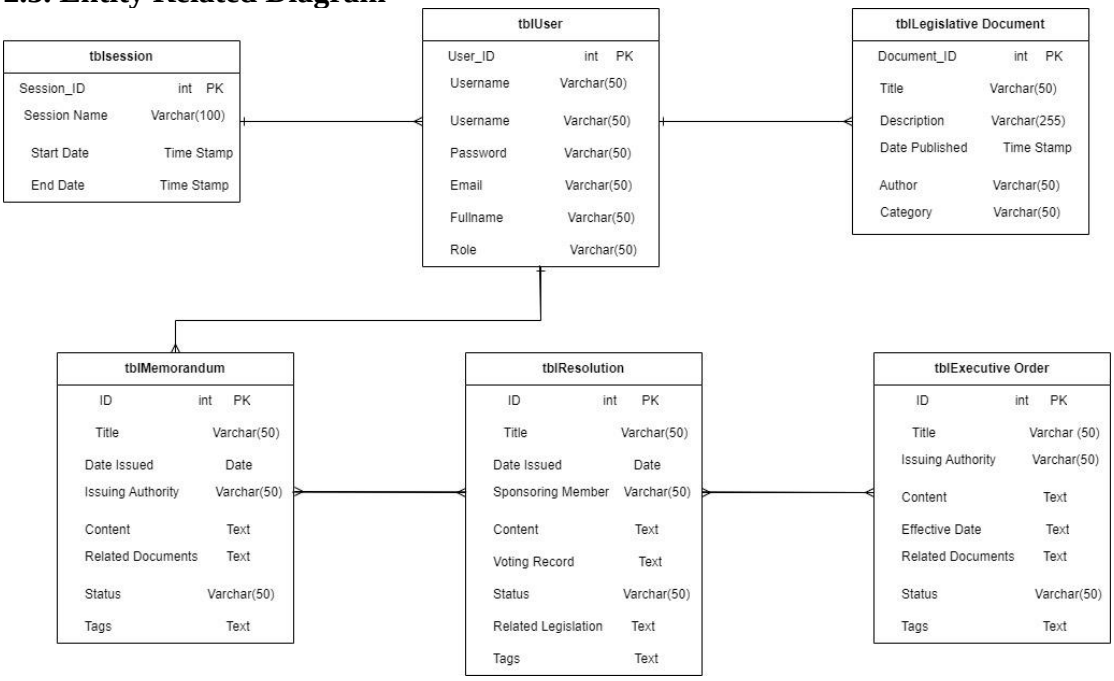
4.1. Context Level Diagram



4.2 Data Flow Diagram



2.3. Entity Related Diagram



Chapter V

APPENDICES

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