

**ILIGAN CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE  
INVENTORY MANAGEMENT AND MONITORING SYSTEM WITH  
DECISION SUPPORT**



A Capstone Project Presented to  
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## Chapter 1

### THE PROBLEM AND ITS SETTINGS

#### Introduction

Technology has transformed our society including many sectors such as social welfare. In today's advanced technological age, relying on manual methods to track inventory is no longer sufficient, especially in welfare program subsidies where accurate stock management is critical. Despite this, many government offices continue to use outdated, manual processes, which often lead to problems. Wynn emphasizes that manual inventory systems are plagued by inaccuracies and inefficiencies, leading to stock discrepancies and operational delays [1]. Similarly, challenges in the Philippines, such as human errors and time-consuming processes, also contribute to increased costs and inefficiencies [2]. As technology and data become increasingly important, these manual methods are proving inadequate. These issues underscore the need for automated solutions to enhance inventory management across different contexts.

Holloway, highlights that digital technology, such as cloud computing and data analytics, transforms inventory management by enabling real-time tracking and better decision-making [3]. Similarly, Sama & Mdebu emphasize that efficient inventory management in the public sector improves service delivery by ensuring timely resource availability [4]. On another hand, Of & Devis argue that traditional



methods lead to inaccuracies and inefficiencies, highlighting the need for robust systems to enhance organizational performance [5].

Iligan City, located in the northern part of Mindanao in the Philippines, faces various socio-economic challenges, including poverty and a high number of internally displaced persons due to regional conflicts. The Iligan City Social Welfare and Development Office (CSWD) is essential in addressing the needs of disadvantaged individuals and vulnerable groups by providing necessary supplies through its welfare programs, which focus on food and educational support for the poor and vulnerable populations such as youth offenders, abused victims, and orphans. These are the various welfare program centers, specifically: The Dangpanan sa Kabataan Day Center (DSKC) that offers educational and feeding programs for street and Bajau children. The Children Assessment Processing Center (OSAEC) that protects women and children from abuse and trafficking through residential care. The PAG-ASA Youth Home Center (CICL) provides safe space and rehabilitation for children in conflict with the law. Lastly, the Happy Life Children's Home Center that serves as a residential treatment facility for girls who have been victims of sexual abuse or exploitation [6]. However, both the CSWD and its welfare program centers still use a manual system to track inventory of supplies delivered. This outdated approach leads to inefficiencies and difficulties in maintaining accurate records. Each program center is responsible for reporting their inventory status and the details of received



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delivered supplies. Unfortunately, discrepancies often arise during audits and inspections, as the records frequently do not match the actual delivered items due to a lack of precise confirmation and oversight.

To address the issues of inaccurate records and inefficiencies, the researchers are developing an inventory management and monitoring system with decision support. This system will automate inventory tracking, provide real-time updates, and offer data-driven recommendations for resource allocation. By integrating these features, the system aims to improve accuracy, streamline operations, and enhance the overall management of supplies for the CSWD and its program centers.

### **Statement of the Problem**

In this section, the researchers identify key challenges faced by the Iligan City Social Welfare and Development Office (CSWD) due to the reliance on outdated manual methods for inventory and supply monitoring.

1. The CSWD office lacks a centralized system for managing and monitoring the supplies provided to the welfare centers, relying primarily on manual processes.
2. The current inventory management used by the CSWD struggles with accurately tracking records and monitoring the stock status across welfare centers.



3. The current manual method does not support efficient resource allocation and decision-making, leading to suboptimal distribution of supplies and impacting overall operational efficiency.

### **Objectives of the Study**

The aim of this study is to develop an automated inventory management and monitoring system with decision support to address these challenges, improve accuracy, and enhance overall efficiency in supply management for the CSWD and its welfare centers.

1. Design a system that is a centralized inventory management system to streamline the management and monitoring of supplies across all welfare centers, replacing outdated manual processes.
2. Develop a system that includes features within the system that improve record-keeping accuracy and enable precise tracking of inventory levels and stock status.
3. Test and evaluate a system that utilizes decision support within the system to assist in efficient resource allocation and inventory management decisions, thereby improving overall operational efficiency and effectiveness.



## Scope and Limitation of the Study

This study focuses on developing a centralized inventory management and monitoring system with a decision support for the Iligan City Social Welfare and Development Office (CSWD). The system aims to streamline the tracking of supplies and optimize resource allocation across the CSWD office and its associated welfare centers, including the Dangpanan sa Kabataan Day Center, Children Assessment Processing Center (OSAEC), PAG-ASA Youth Home Center (CICL), and Happy Life Children's Home Center. It will provide statuses within the system for low inventory levels to ensure timely reordering and prevent shortages.

The CSWD staff will play a crucial role in maintaining and monitoring the system. They are responsible for generating Purchase Requests (PR) and auditing Purchase Orders (PO) and Purchase Receipts (PRT) to ensure the accuracy and completeness of delivered items. Staff members can register their own inventory for office supplies, submit purchased requests and receive purchase orders together with the welfare centers to check supply lists and be able to generate reports. However, they will not have the ability to edit inventory records for other centers, only their own.

Welfare Center Officers-in-Charge (OICs) at each welfare center will be responsible for maintaining their supply inventory by registering items into the



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system based on deliveries and stock status. They are tasked with receiving supplies from suppliers, viewing inventory reports, and ensuring accurate tracking and reporting of inventory at their respective centers. They are also able to submit withdrawal items to update their inventory for their daily or weekly consumption. They will not be able to edit or manage inventory data for other welfare centers.

The CSWD Head will have access to view reports generated by the system and provide remarks as needed. Their role involves reviewing overall inventory data and ensuring strategic oversight, but does not extend to directly monitoring inventory levels or managing day-to-day operations within the system.

Suppliers are involved in the workflow however they do not interact or have direct access to the system. They are responsible for delivering supplies to the welfare centers along with Purchase Receipts (PRT), which are audited by CSWD staff.

BAC or Bids and Awards Committee, are a group within a government agency or organization responsible for procurement processes, handling of purchase requests and managing government funds in acquiring goods. They issue a Purchase Order (PO) document, which is sent to the CSWD office to facilitate the allocation of goods to the welfare centers. Like the suppliers, the BAC does not interact with or have direct access to the system.



## Significance of the Study

This study is crucial as it aims to develop an advanced inventory management system for the Iligan City Social Welfare and Development Office, addressing existing inefficiencies in tracking and managing supplies. By implementing this system, the study seeks to enhance operational effectiveness, improve resource allocation, and ensure timely delivery of essential supplies to the welfare centers.

**CSWD Office.** The system's success will have a centralized system inventory management and resource allocation that enhance overall operational efficiency and effectiveness, streamlining administrative processes and ensuring better service delivery.

**Welfare Centers.** Each welfare program center will benefit from more accurate tracking of supplies and timely updates, leading to better inventory control and reduced operational challenges.

**Staff and Officers-in-Charge.** Users involved in inventory management will experience more efficient workflows and fewer manual errors, improving their ability to manage and report on inventory effectively.



**Disadvantaged Individuals and Groups.** Enhanced inventory management ensures that essential supplies and services are provided more reliably and efficiently to those in need, improving their access to support and resources.

**Current Researchers.** By working on this study, researchers will gain practical experience in creating and implementing an advanced inventory management system tailored to social welfare needs. This hands-on work will deepen their understanding of how to integrate technology with inventory management and decision support, adding valuable skills to their expertise.

**Future Researchers.** This study will provide a solid starting point for future research in inventory management systems for social services. It offers a detailed example of how such systems can be developed and applied, helping future researchers build on this knowledge and explore new improvements in the field.

### **Definition of Terms**

To ensure clarity and understanding, this section defines the key terms and concepts used throughout the study.

**BAC.** In this study, the Bids and Awards Committee refers to the group responsible for overseeing procurement processes, including handling purchase requests and issuing purchase orders for goods required by the City Social Welfare and Development Office.



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**CSWD.** In this study, the City Social Welfare and Development Office, is the government office dedicated for providing essential supplies for welfare centers and responsible for managing and maintaining the system.

**Decision Support.** In this study, it refers to a system feature that recommends resource allocation and displays the status of low inventory levels, ensuring optimal distribution and preventing shortages.

**Inventory.** In this study, it refers to the registered both welfare goods and office supplies, that are stored and managed for future use. Inventory accounts are credited when items are issued, transferred, or disposed of.

**Inventory Management System.** In this study, it refers to an automated system that simplifies the management of inventory by efficiently recording and updating inventory records.

**Monitoring System.** In this study, it refers to a system component that continuously tracks and reviews inventory status, ensuring real-time visibility and accuracy of inventory levels, while incorporating a decision support function to guide inventory management and resource allocation decisions.

**Purchase Orders.** In this study, Purchase Orders refer to formal documents issued by the CSWD to suppliers, specifying the items, quantities, and agreed-upon prices for products or services required by welfare centers.



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**Purchase Receipt.** In this study, Purchase Receipt refers to the documentation provided upon the delivery of goods or services, confirming that the items listed in the Purchase Order have been received by the welfare centers.

**Purchase Request.** In this study, Purchase Request refers to the initial document generated by the office based on the stock level status from the system.

**Supplies.** In this study, this refers to the goods and materials purchased or acquired for distribution, including welfare goods like canned food and blankets, and office items like paper and ink. Supplies are tracked in inventory until they are issued to end-users or otherwise disposed of.

**Welfare Center.** In this study, these are the various programs listed and managed through the system by the CSWD, which focus on food and educational support for the poor and vulnerable populations such as youth offenders, abused victims, and orphans.

**Withdrawal.** In this study, this refers to the process of removing supplies from inventory, typically for distribution to welfare centers or other authorized recipients, ensuring that proper documentation and tracking are maintained.



## Chapter 2

### REVIEW OF RELATED STUDIES AND LITERATURE

This chapter presents the overview of the related literature and studies, which served as the background information relevant to the problem of the study.

#### Related Literature

The literature recognized various factors on why an inventory management and monitoring system is practical and functional in enhancing the processes and preserving the supplies in the inventory. This review explores the studies on inventory management and decision support systems.

Poverty and hunger are two of the problems that have plagued the world. Within the Philippines, an estimated 12.6% of Filipino families face hunger and extreme poverty [7]. Social welfare programs in the Philippines play a pivotal part in addressing poverty and improving the lives of millions of Filipinos. As of 2021, there are approximately 19.99 million individuals residing below the national poverty line, making these efforts crucial for delivering crucial services like healthcare, education, and financial support to those who require assistance [8]. Within this context, social programs in the Philippines significantly impact the nation's most vulnerable populations by alleviating poverty, promoting social equity, and enhancing human capital development. These initiatives provide essential services such as healthcare, education, and livelihood support,



contributing to the overall well-being and resilience of communities, especially in the face of natural disasters. They play a crucial role in reducing social inequalities and fostering a more inclusive society [9]. Regardless of their efforts, most of the time they fail to improve health outcomes in these populations. The Role of Social Assistance Programs to the Community highlights the social service programs as an important part of the social security system, showing the government's dedication to helping the ones who are in need. These programs not only aid individuals or families in dealing financial problems, but also help them out through sustainable development methods [10].

Every organization has to have an effective inventory management system in place, and social welfare organizations are no different. Effective inventory management can result in boosted service quality and enhances the quality of efficiency of its workers. Having trouble maintaining ideal inventory levels, which could directly affect the service quality metrics. Issues like stock outs, excess inventory, and resource waste can result from improper inventory management. These problems may cause delays in the delivery of necessary supplies, higher expenses, and a general reduction in service quality [10]. Without inventory management it would be difficult for any company to maintain control and be able to handle the needs of their customers. Without procedures in place to oversee inventory levels it will be quite easy to allow inventory levels to diminish to dangerous levels, levels that will prevent the company from meeting the



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supply and demand needs [11].

The internet has greatly changed our daily lives by making communication easier and breaking down geographical barriers. It has connected us in new ways, allowing us to form global communities based on shared interests. According to Dentzel, this shift has impacted how we work, learn, and interact with loved ones, driving social evolution. While traditional communication tools are still used, new technologies are rapidly transforming how we connect, especially among young people. The internet also brings new privacy and security challenges as we rely on it more and more [13].

A decision support system (DSS) is a computer program application used to improve a company's decision-making capabilities. It analyzes large amounts of data and presents an organization with the best possible options available. DSSs are utilized to analyze data related to inventory levels, demand forecasting, and other relevant factors, providing insights and recommendations for effective decision-making [13]. These systems help reduce errors, streamline workflows, and improve planning, thereby increasing management success. Additionally, DSSs aid professionals in understanding the potential impacts of their decisions [15]. Similarly, Long and other authors said that intelligent decision support systems (IDSS) can further enhance inventory management by effectively addressing unpredictable events, such as sudden changes in demand or supply chain disruptions. The use of IDSS allows businesses to make faster and more



accurate decisions, mitigating risks and maintaining optimal inventory levels even under uncertain conditions. The article "Decision Support System for Adaptive Sourcing and Inventory Management in Small- and Medium-Sized Enterprises" explains how adaptive DSS can optimize the levels of inventory, make procurement processes easier, and adapt to market demand fluctuations. It calls for the integration of such systems into SMEs to enhance their efficiency and sustainability in running their operations. This is one way SMEs make data-based decisions to ensure efficient use of resources and cost management [15].

### **Related Studies**

Outdated manual inventory management is causing struggles and inefficiencies in many social services. There are several aspects identified in various studies that address the challenges traditional governments experience due to insufficient ICT utilization and examine the substantial impact of web-based services in improving government efficiency and engaging citizens. Furthermore, the increasing role of online platforms in transforming inventory management processes is emphasized

Many traditional governments in different countries face challenges because of limited and inappropriate use of ICT. When ICT is not used adequately, it means relying on manual archiving systems, while improper use leads to inefficient communication and data sharing among government agencies, as noted by [16]. Information and Communication Technology (ICT) has been shown by



Devi (2021) to improve transparency and efficiency in public administration, thereby enhancing government operations and accountability. Similarly, Kadewandana & Kaligis (2024) emphasize the support of e-government by ICT, which enhances the efficiency and sustainability of public services. ICT is also highlighted for its role in improving government operations through data management and communication tools. Getao talks into how the incorporation of ICT has improved both the government and private sectors in Kenya. While recognizing the important improvements in service delivery, efficiency and citizen engagement, the article also talks about the challenges such as cybersecurity and digital literacy [19].

There will be many challenges and obstacles that can happen if the use of ICT resources are not utilized effectively. A study from 2022 found that this challenge features human error, higher operational costs, limited scalability, inefficiency, inaccuracies and it is time consuming [20]. Another article found the advantages of using an inventory management system. Efficient inventory management can streamline production and fulfillment processes for a business. It can lower cost of operation, minimize inventory storage needs and streamline all of the processes [21].

The researchers came to the conclusion that relying on manual operations in managing and monitoring your inventory is not reliable anymore, developing this kind of system presents many advantages and benefits in using this type of



system. A lot of research has been conducted on inventory management systems, but most of them do not involve the decision support system. The goal of this study is to develop an inventory management and monitoring system that will feature a decision support system that will help the staff of the office.

In conclusion, a review of pertinent research and literature is necessary to fully understand the Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support. This gives important background knowledge on how they function, and also chances for development of the system. This research aims to further develop the Inventory Management system by applying the insights collected from previous research to improve the process of recording the supplies to the system.

**Table 1**  
*Research Synthesis Matrix*

Authors	Objective	Methodology	Gap	Findings
Social Welfare (2024)	The article aims to explain the role and analysis of importance of various social welfare programs in initiatives and lives of vulnerable communities.	It provides an overview and analysis of social welfare programs in initiatives and lives of vulnerable communities.	The article does not extensively explore the long-term sustainability and scalability of these social welfare programs.	Social welfare programs have a significant positive impact on individuals and communities, helping them overcome challenges and achieve better living conditions.
Social Welfare	The article aims to explain the role and analysis of importance of various social welfare programs in initiatives and lives of vulnerable communities.	It uses case studies and expert insights.	The article does not extensively explore the long-term sustainability and scalability of these social welfare programs.	The article The social



Program in the Philippines (2024)	<p>to provide a descriptive comprehensive analysis to thoroughly overview of the detail the assess the various social structure and effectiveness welfare programs reach of these and long-term available in the including data outcomes of the Philippines on beneficiaries the social and their and funding. welfare intended programs.</p> <p>benefits.</p>	<p>welfare programs in the Philippines play a crucial role in supporting underprivileged sectors, but their impact varies depending on implementation and accessibility.</p>		
Dr. Ajith Sankar, Dr. Sanjay Bhaskaran, Dr. Jubi R. (2024)	<p>The article aims to examine how different inventory management techniques affect the quality of services in the service sector.</p>	<p>It employs a combination of quantitative data analysis and case studies from various service industries to evaluate the impact of service sector.</p> <p>inventory management practices.</p>	<p>The article does not fully explore the role of technology in enhancing inventory management.</p>	<p>Effective inventory management techniques are shown to significantly improve service quality, leading to higher customer satisfaction and operational efficiency.</p>
Djohan, D., & Stefvy. (2023)	<p>The article aims to investigate the relationship between inventory management practices and customer satisfaction at Apotik Global Medan.</p>	<p>It uses a survey-based approach, collecting data from customers and analyzing inventory management processes to assess their impact on customer satisfaction.</p>	<p>The article does not consider the influence of external factors, such as market demand fluctuations, on inventory management and customer satisfaction.</p>	<p>Effective inventory management at Apotik Global Medan leads to higher customer satisfaction by ensuring product availability and reducing waiting times.</p>
Mohamed, M., & Saber, N. E.	<p>The article aims to develop and</p>	<p>It uses a combination of</p>	<p>The article does not</p>	<p>The intelligent decision support</p>



(2023)	evaluate an algorithmic modeling and simulation techniques to support system designed to test the effectiveness of inventory management processes.	explore the potential challenges or limitations of implementing the intelligent decision system in support various inventory scenarios.	the system significantly improves inventory management efficiency, leading to reduced costs and better resource utilization.	
Long et al. (2023)	The article aims to develop an intelligent decision support system (IDSS) that optimizes inventory management in the face of unpredictable events.	It uses advanced algorithms and simulations to address the model inventory scenarios affected by stochastic, random, and tests the system's effectiveness in managing these challenges.	The article does not extensively address the integration of the IDSS with existing enterprise planning (ERP) systems.	The intelligent decision support system improves inventory management by enabling more accurate and timely decisions, even when dealing with unexpected changes in demand or supply.
Siravat Teerasoponpong and Apichat Sopadang (2022)	The study aims to create a DSS that will support decision-making at together with SMEs on modeling processes of managing optimization of sourcing and inventory management.	They used adaptive decision-support mechanisms to enhance inventories in SMEs and will also address data uncertainty and	The research tools for SMEs in inventory and sourcing that usually lack resources for more sophisticated decision-making systems.	An adaptive DSS helps SMEs to streamline their inventory management and sourcing decisions effectively so that better resource allocation and cost management can be realized.



limited resources.

Roshna Devi,  
et. al. (2021)

The study aims to explore how information and communication technology (ICT) contributes to improving governance processes and promoting transparency.

It uses literature review and case studies to address the challenges and impact of ICT on various aspects of governance.

The article does not extensively analyze the challenges and limitations faced by smaller or less developed regions in implementing ICT solutions.

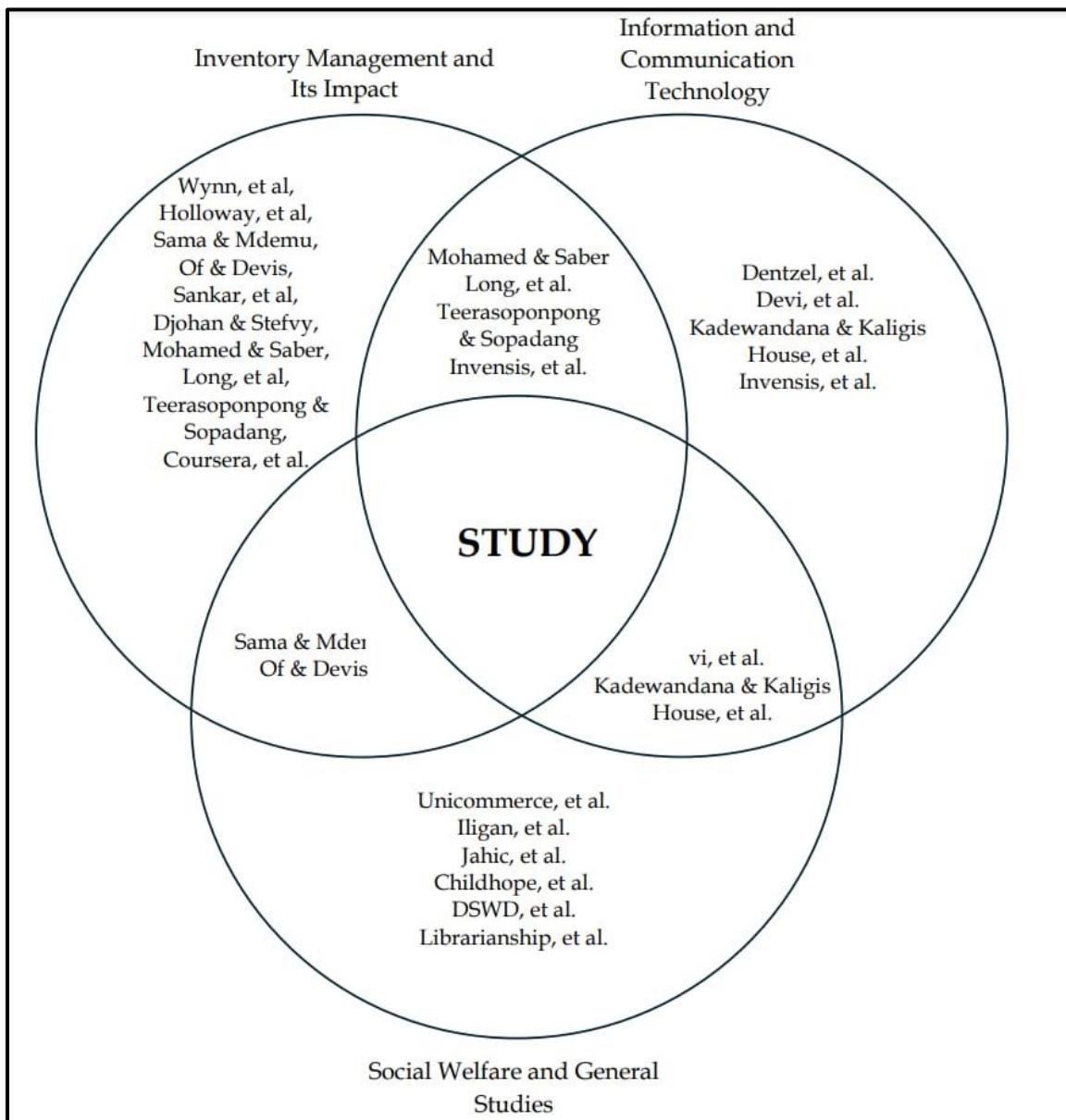
Kadewandana,  
D., & Kaligis,  
R. (2024)

The journal aims to review how ICT supports e-government initiatives and contributes to sustainable development.

It employs literature review to examine various studies and perspectives on ICT's role in e-government.

The article does not address the practical challenges of implementing ICT solutions in low-resource settings.

ICT significantly enhances e-government efforts by improving service delivery, increasing transparency, and promoting sustainable development practices.



**Figure 1** Summary of Related Studies



## Chapter 3

### RESEARCH METHOD

In this chapter, the researchers will show the details, methods and procedures that are used to develop an inventory management and monitoring system with decision support.

#### Context Diagram

The researchers used system analysis as a method to gather information about the needs of the system. A context diagram will help provide a clear overview of how the system will interact with entities and see how the data moves between them. Figure 1 provides a context diagram used in the study showing a simple and straightforward representation of the interactions in the system.

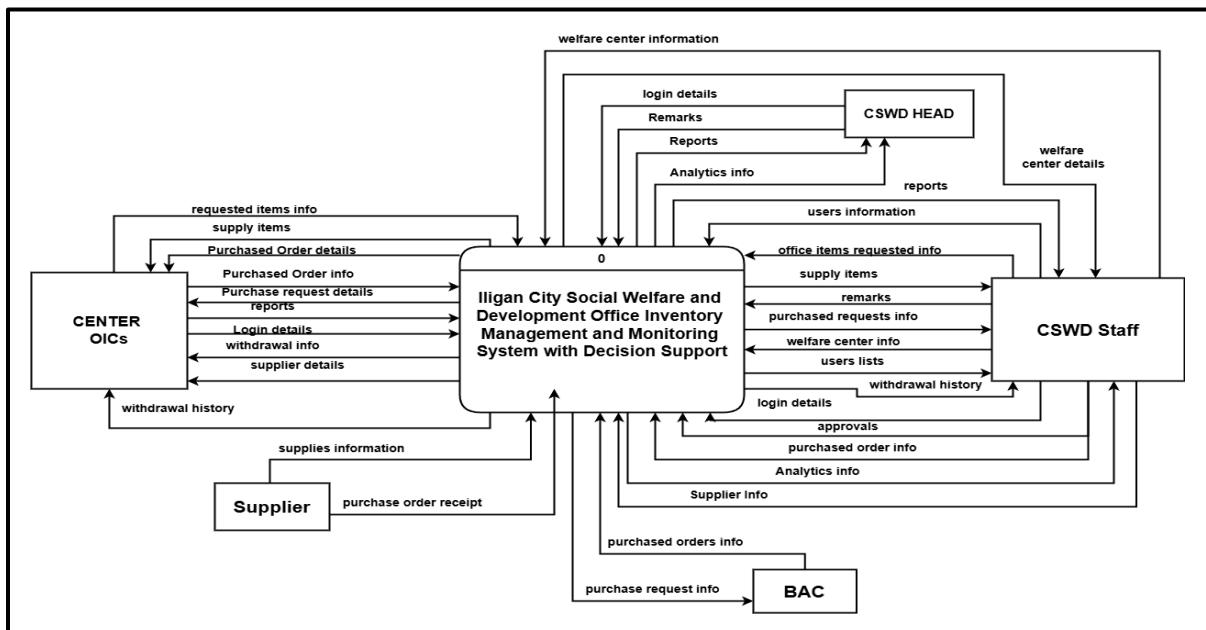


Figure 2 Context Diagram

The context diagram provides a simplified view of the main processes



within the inventory management and monitoring system for the Iligan City Social Welfare and Development Office (CSWD). The arrows in the diagram indicate the flow of data between the various entities involved, including both internal users and external sources.

CSWD Staff play a critical role in verifying the accuracy of delivered supplies and monitoring the overall system. They have access to the forms submitted by the centers like Purchase Requests (PR), Purchased Orders (PO), withdrawal items and Purchase Receipts (PRT), ensuring that all inventory-related data is accurate and up-to-date. They can view the inventory with the withdrawal history of every welfare center. They are able to generate reports for all welfare centers on their inventory, purchase request and purchased orders forms.

Welfare Center Officers-in-Charge (OICs) are responsible for managing the inventory of their respective centers. They have the access to submit purchase requests, orders that were delivered, withdrawal items, monitor their center's stock levels, and request new items within the system based on their needs. Their input helps maintain accurate records and ensures timely replenishment of supplies. They are required to register withdrawal items to keep track of their stocks status.

The CSWD Head oversees the entire system, reviewing reports and inventory data. They do not engage in daily monitoring or inventory management but can provide strategic oversight and leave remarks.



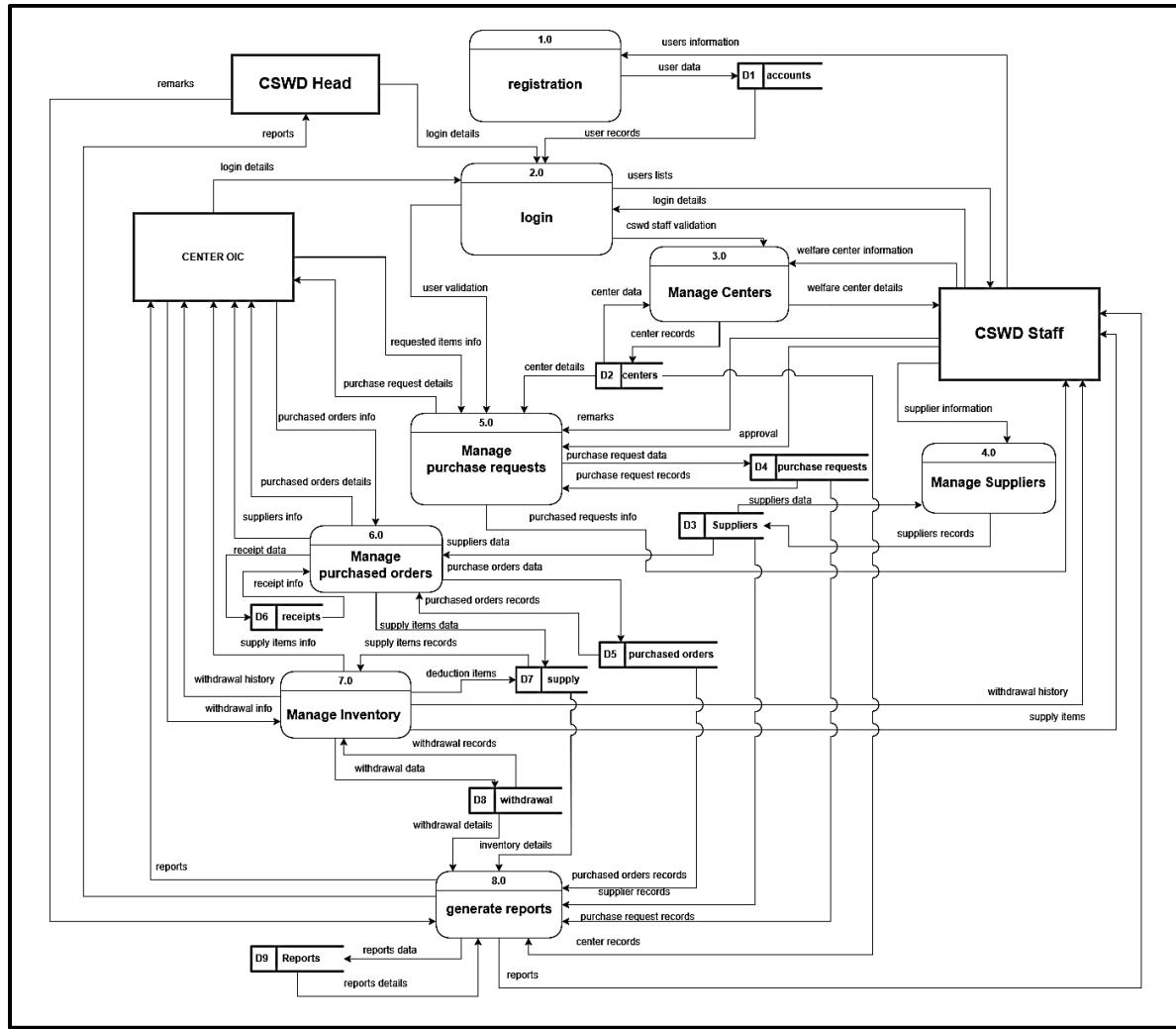
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Suppliers are responsible for delivering supplies and providing Purchase Receipts (PRT) for confirmation from the CSWD staff. While they play a critical role in the supply chain, they do not interact with the inventory management system directly.

BAC or Bids and Awards Committee, are responsible to issue a Purchase Order (PO) document, which is sent to the CSWD office to facilitate the allocation of goods to the welfare centers. Like the suppliers, the BAC does not interact with or have direct access to the system.

### **System Design**

A data flow diagram (DFD) visually represents how data moves through a system, focusing on its process aspects. It uses symbols to show data flow: processes manipulate data by performing calculations or making logical decisions, while arrows indicate data movement between external entities, processes, and data storage. Data storage holds information for later use by processes, and external entities act as sources or destinations of data within the system.



**Figure 3** Level 0 Data flow diagram

In Figure 3, the DFD Level 0 illustration depicts the overall structure of Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support. In zero-level data flow diagrams, only the key processes and the system displaying all data storage are connected, allowing the flow of interacting data to communicate with each other.

In the zero-level Data flow Diagram, the system involves five processes for data stores: registration, login, manage purchased requests, manage purchased



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order, manage inventory, and generate reports.

In Process 1.0, known as registration, users like CSWD Head, Welfare Center OICs and CSWD Staff need to be registered to the system by providing their personal details with specified roles. Once registered, users gain access to the system. The Cswd Staff are the one to create accounts for the welfare centers, providing them their user credentials, however the other users can update or change their user credentials.

In process 2.0, called login, allows all users to access their accounts, ensuring that only those with proper authorization can perform actions to the system.

In process 3.0, called Manage Centers, allows the CSWD staff to register welfare centers involved into the system. This process also lets the CSWD staff view the welfare center's details and their inventories.

In process 4.0, called Manage Suppliers, where the CSWD Staff are the one to register a list of affiliated suppliers for the CSWD. Their address and other information are being recorded.

In process 5.0, called Manage Purchase requests, allows the Welfare Center OIC to submit requested items and CSWD staff will update the status of submitted requests.

In process 6.0, called Manage Purchased Orders, where once the purchase request is approved by the CSWD Staff and the requested items are delivered to



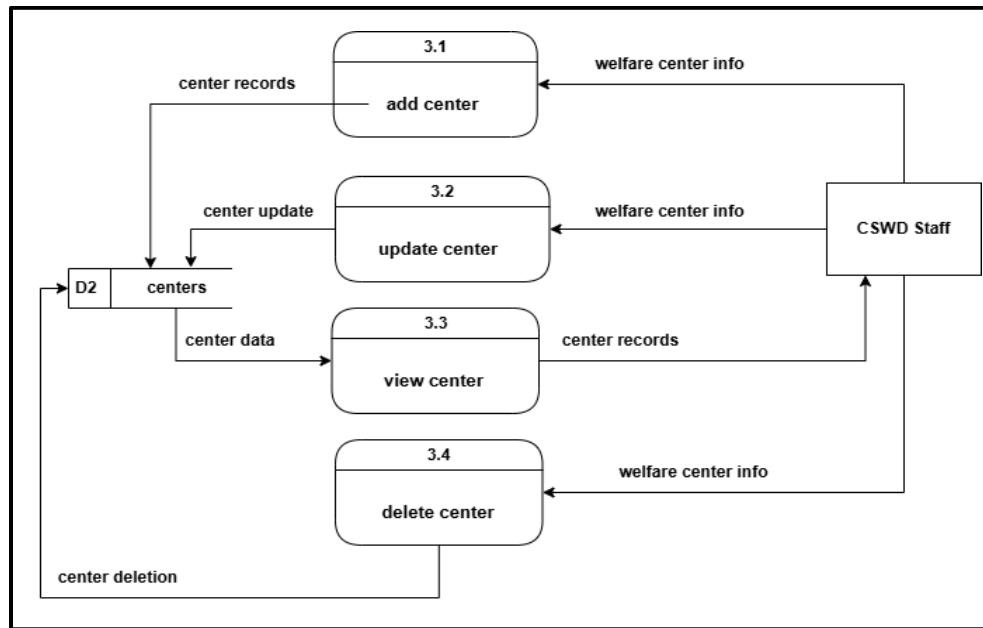
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their respective welfare centers, the both of them have access to generate purchased orders form, requiring it to input the necessary information of the suppliers, attach purchased order physical document and receipts.

In process 7.0, called Manage Inventory, allows the Welfare Center OIC to view their own inventory and also to store the inventory supply, requiring them to generate the purchase order items to store the Supply Inventory. CSWD staff can also register their office supply items for their inventory. Additionally, they are able to view the inventory lists filtered by each welfare center.

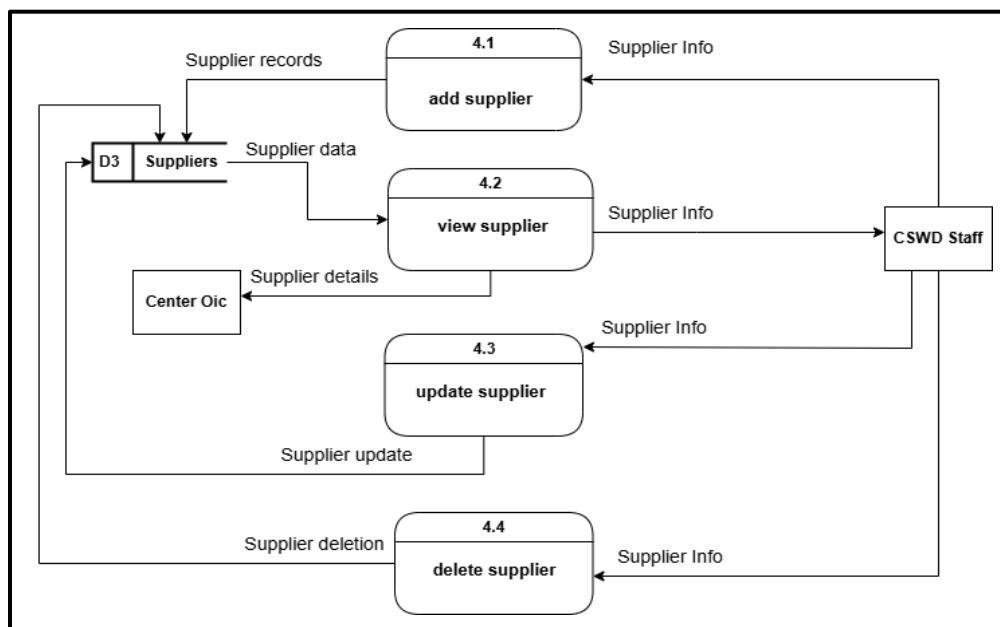
In process 8.0, called Generate Reports, allows all users to view the generated reports of the inventory, purchase request, purchase order and others for the CSWD Staff.

The DFD Level 1 will break down key processes to show how the system functions in detail., It illustrates how data flows between different tasks and storage areas, giving a clearer understanding of how the inventory management system operates. This breakdown helps us understand specific actions showing how they all work together within the system.



**Figure 4** Level 1 DFD of Process 3.0 Manage Centers

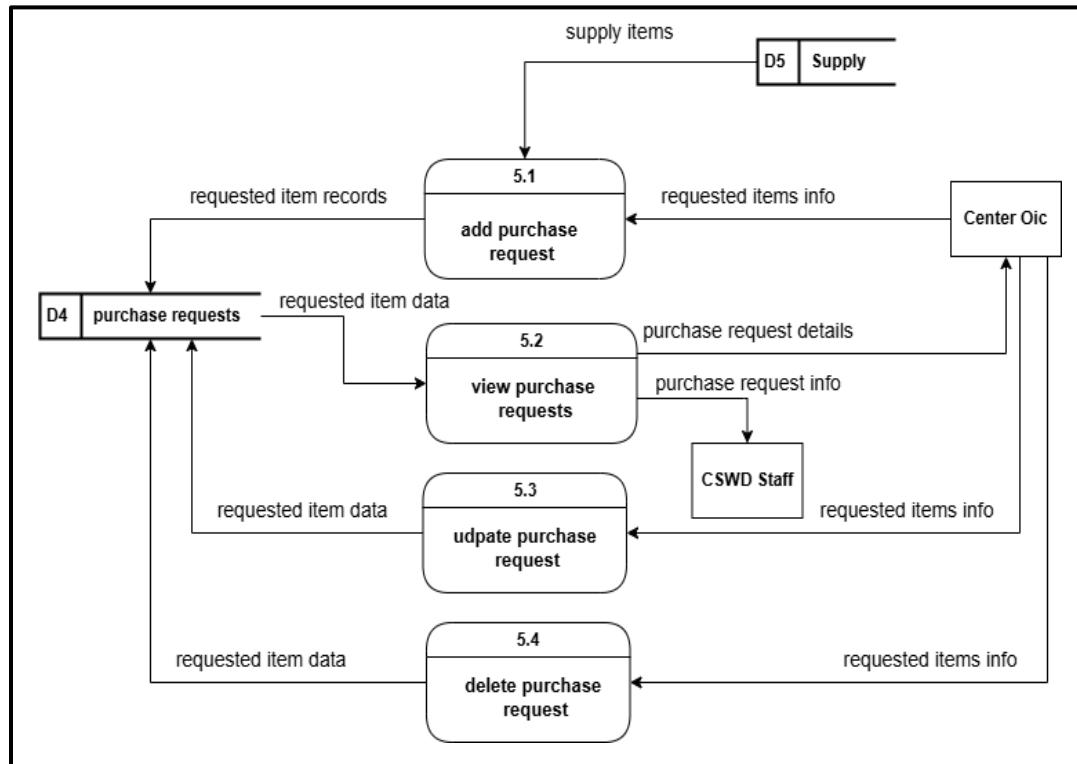
In figure 4, this is where the CSWD staff can add, update and delete welfare centers to the system, the CSWD Staff will be able to view all of the welfare centers registered to the system.



**Figure 5** Level 1 DFD of Process 4.0 Manage Suppliers

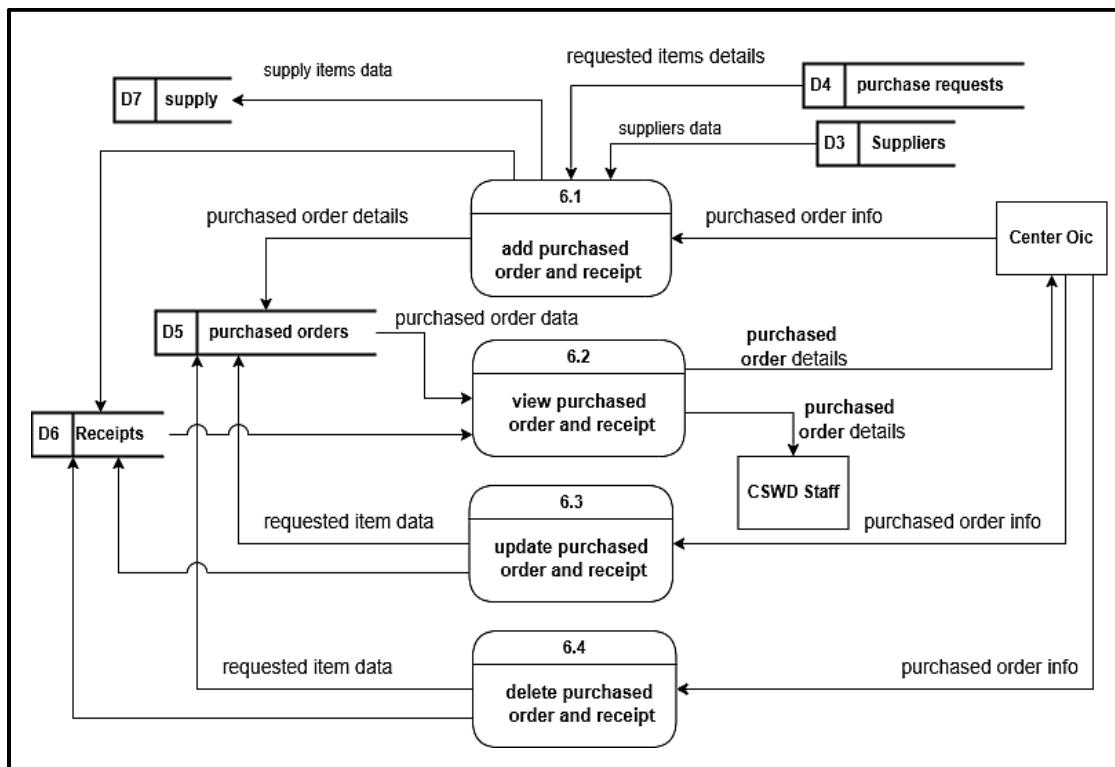


In figure 5, this is where the CSWD staff can add, update and delete suppliers to the system, the CSWD Staff will be able to view all of the suppliers registered to the system.



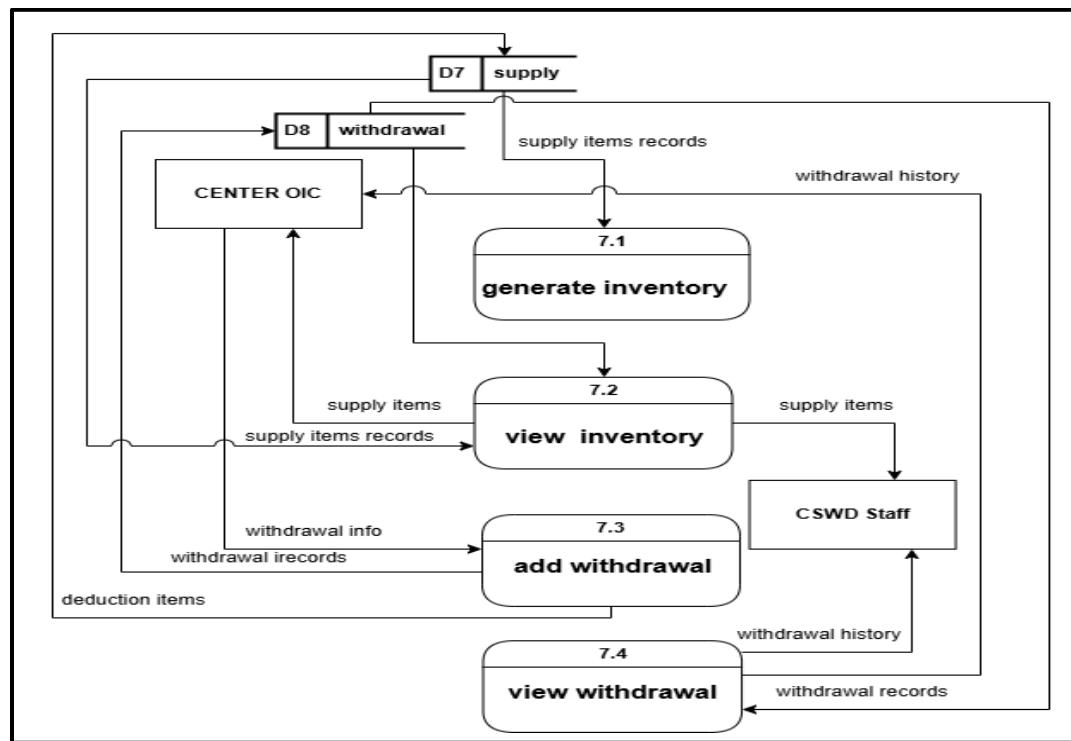
**Figure 6** Level 1 DFD of Process 5.0 Manage Purchase Requests

In figure 6, this is where the Center Oic can add, update and delete purchase requests to the system, the CSWD Staff will be able to view all of the submitted purchase requests to the system.



**Figure 7** Level 1 DFD of Process 6.0 Manage Purchase Orders

In figure 7, this is where the Center Oic can submit purchased order when the purchase status is approved by the CSWD Staff and delivered to the respective centers. This requires to register the suppliers, receipts, and fetches the requested items from the purchase requests data. This will then store the purchased order items to the Supply data store.



**Figure 8** Level 1 DFD of Process 7.0 Manage Inventory

In figure 8, this is where the Welfare Center OICs have the access to view their inventory supply items and withdrawal history. This require them to submit daily or weekly withdrawal items to keep track of the stocks so that they are eligible to request items to restock.

### Entity Relationship Diagram

To gain a deeper understanding of the information identified in the Context Diagram and the processes depicted in the Data Flow Diagram, researchers created the Entity Relationship Diagram (ERD). This diagram visually represents the external entities participating in the system and their connections, using graphical symbols to aid system analysts in comprehending the system's overall flow.

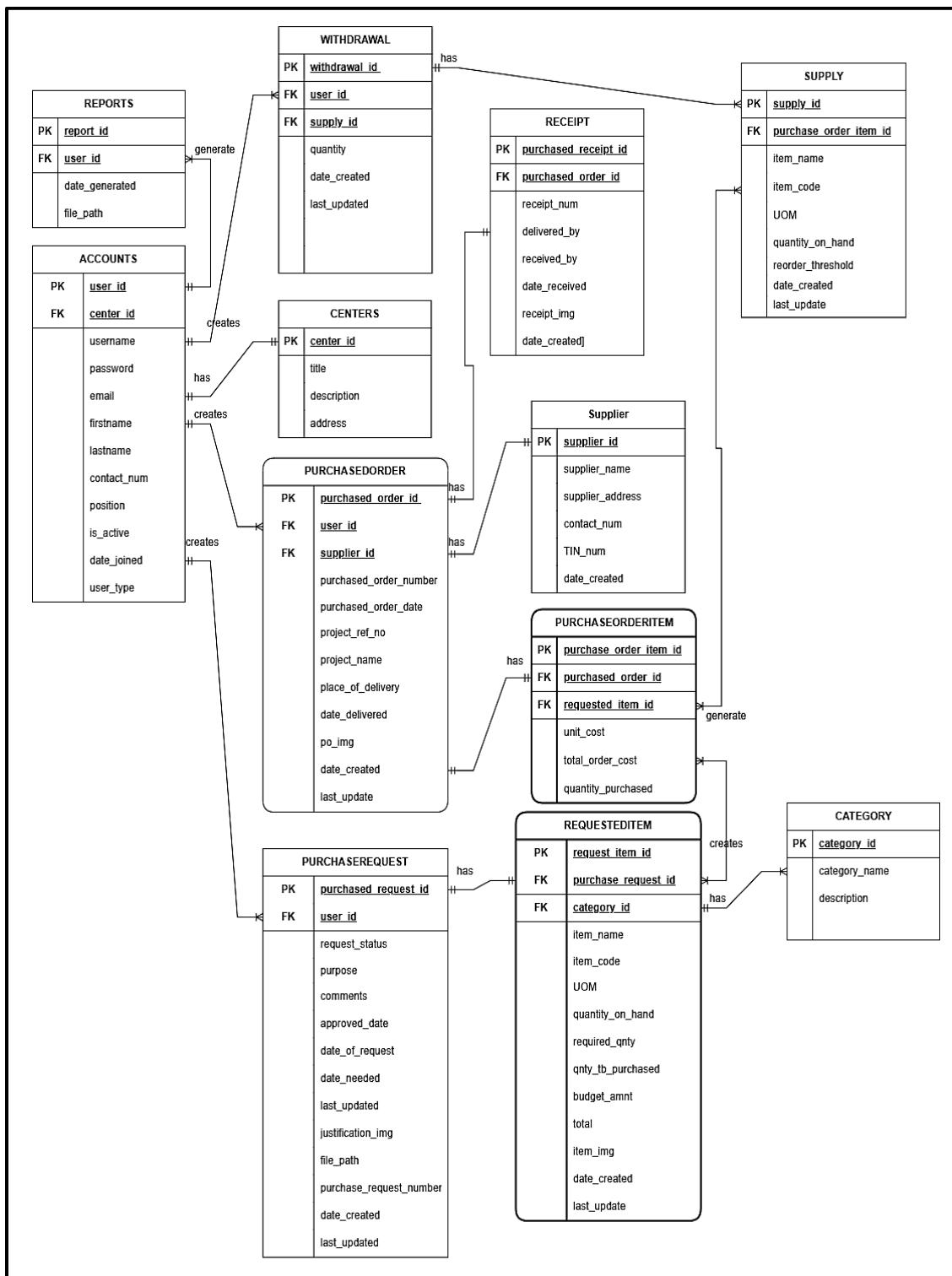


Figure 9 Entity Relationship Diagram

An Entity Relationship Diagram (ERD) serves as a graphical representation



of the relationships between entities in a database. In the context of Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support, an ERD would illustrate the connections between different data types, such as Users, Inventory, Purchased Receipts, Documents and many more.

The accounts table represents the entities who are using the system. It includes information such as the username, password, email, firstname, lastname, contact\_num, position, is\_active, date\_joined, and the user\_type. The center\_id acts as a foreign key, linking users to specific centers.

The centers table holds details about the welfare program centers. It includes the title, description, and address of each center.

The category table represents the categorization of supply items. It includes the category\_name and a brief description.

The supplier table contains data about suppliers who fulfill purchase orders. It includes fields like supplier\_name, supplier\_address, contact\_num, TIN\_num, and the date\_created.

The purchase request table represents the requests generated for supply items needed by welfare centers. It includes fields such as request\_status, purpose, comments, approved\_date, date\_of\_request, date\_needed, last\_updated, justification\_img, file\_path, and a unique purchase\_request\_number. The table is linked to the accounts table via the user\_id.



The requested item table holds detailed information about items requested in purchase requests. It includes fields such as item\_name, item\_code, UOM (Unit of Measurement), quantity\_on\_hand, required\_qnty, qnty\_tb\_purchased, budget\_amnt, total, item\_img, date\_created, and last\_update. The table links to the purchase request and accounts tables via purchase\_request\_id and user\_id.

The purchased order table focuses on purchase orders and details related to suppliers. It includes fields such as purchased\_order\_number, purchased\_order\_date, project\_ref\_no, project\_name, place\_of\_delivery, date\_delivered, po\_img, date\_created, and last\_update. It links to the supplier table and purchase request table through foreign keys.

The purchase order item table records data on specific items within purchase orders. It includes fields such as unit\_cost, total\_order\_cost, and quantity\_purchased. It links to the requested item table via requested\_item\_id and purchased order item via purchased\_order\_id.

The supply table represents the inventory of items in the welfare centers. It includes details like item\_name, item\_code, uom, quantity\_on\_hand, reorder\_threshold, date\_created, and last\_update. The table links to the purchased order item, and withdrawal tables via foreign keys.

The withdrawal table tracks the withdrawal of items from the inventory. It includes the quantity, date\_created, and last\_updated. It links to the supply table and the accounts table via foreign keys.



The receipts table stores information on receipts for completed purchase orders. It includes fields such as receipt\_num, delivered\_by, received\_by, date\_received, receipt\_img, and date\_created. The table links to the purchased order via foreign key.

The reports table holds the data to be reported to the system users. It includes date\_generated and file\_path. This table links to the accounts table via the user\_id foreign key.

### Data Dictionary

A Data Dictionary, based on the Entity Relationship Diagram (ERD), provides detailed information about the data entities, their attributes, and relationships. It ensures consistent understanding and use of data within the system. The researchers proposed an inventory management and monitoring system with a decision support for the Iligan City Social Welfare and Development Office data dictionary during this stage. This compilation provides descriptions of data objects or items in the data model, serving as a reference for researchers and others involved in the system's development.

**Table 2**  
*Accounts*

Column	Type	Null	Default	Comments
user_id(primary)	int(11)	No		
center_id(foreign)	varchar(50)	No		
username	varchar(50)	No		



---

password	varchar(50)	No
email	varchar(50)	No
firstname	varchar(50)	No
lastname	varchar(50)	No
contact_num	varchar(50)	No
position	varchar(50)	No
is_active	varchar(50)	No
date_joined	datetime	No      CurrentTimeStamp()
user_type	Enum	No

---

Table 2 shows the Accounts table, it stores the details of the users of the system. Username and password are important for logging in into the system. It has user\_id as its primary key and center\_id as a foreign key. There are multiple fields that need to be filled such as email, firstname, lastname, contact\_num, position, is\_active, date\_joined and user\_type. the user\_type is to determine what type of user registered using enum type to distinguish the following user types; cswdStaff, Head, and centerOic.

**Table 3**  
*Centers*

---

Column	Type	Null	Default	Comments
center_id(primary)	int(11)	No		

---



---

title	varchar(50)	No
description	varchar(50)	No
address	varchar(50)	No

---

Table 3 shows the Centers table, it stores the details of the welfare centers. This includes the center\_id as its primary key, and features attributes such as title, description and address.

**Table 4**  
*Category*

Column	Type	Null	Default	Comments
center_id(primary)	int(11)	No		
category_name	varchar(50)	No		
description	varchar(50)	No		

Table 4 shows the Category table, it stores the categories of all the items found in the inventory. These categories include center\_id as its primary key and features attributes like category\_name and description.

**Table 5**  
*Supplier*

Column	Type	Null	Default	Comments
supplier_id(primary)	int(11)	No		
supplier_name	varchar(50)	No		
supplier_address	varchar(50)	No		
contact_num	varchar(20)	No		



---

TIN_num	varchar(50)	No	
date_created	datetime	No	CurrentTimeStamp()

---

Table 5 shows the Supplier table, it stores the suppliers' details. These include supplier\_id as its primary key and features attributes like supplier\_name, supplier\_address, contact\_num, TIN\_num and date\_created.

**Table 6**  
*Purchase Requests*

---

Column	Type	Null	Default	Comments
purchased_request_id (primary)	int(11)	No		
user_id(foreign)	int(11)	No		
request_status	varchar(50)	No		
purpose	varchar(50)	No		
comments	varchar(50)	No		
approved_date	datetime	No		
date_of_request	datetime	No		
date_needed	datetime	No		
last_updated	datetime	No		
file_path	varchar(255)	No		
purchase_request_number	date	No		

---



Table 6 shows the Purchase Request table; it stores the details of the requests that have been approved. This table includes the purchased\_request\_id as its primary key, user\_id as a foreign key. It also features attributes such as request\_status, purpose, comments, approved\_date, date\_of\_request, date\_needed, last\_updated, file\_path and purchase\_request\_number.

**Table 7**  
*Requested Item*

Column	Type	Null	Default	Comments
request_item_id (primary)	int(11)	No		
user_id(foreign)	int(11)	No		
purchase_request_id (foreign)	int(11)	No		
item_name	varchar(50)	No		
item_code	varchar(50)	No		
UOM	varchar(50)	No		
quantity_on_hand	int(20)	No		
required_qnty	int(20)	No		
qnty_tb_purchased	int(20)	No		
budget_amnt	Decimal(10,2)	No		
total	date	No		
item_img	Varchar(255)	No		
date_created	datetime	No	CurrentTimeStamp()	
last_update	datetime	No		



Table 7 shows the Requested Item table, it stores the data of requested items. This table includes the request\_item\_id as its primary key, user\_id and purchase\_request\_id as foreign keys. It also features attributes such as item\_name, item\_code, UOM, quantity\_on\_hand, required\_qty, qnty\_tb\_purchased, budget\_amnt, total, item\_img, date\_created and last update.

**Table 8**  
*Purchased Order*

Column	Type	Null	Default	Comments
purchased_order_id (primary)	int(11)	No		
user_id(foreign)	int(11)	No		
supplier_id(foreign)	int(11)	No		
purchase_request_id (foreign)	int(11)	No		
purchased_order_nu mber	varchar(50)	No		
purchased_order_da te	datetime	No		
project_ref_no	varchar(255)	No		
project_name	varchar(50)	No		
place_of_delivery	varchar(50)	No		
date_delivered	varchar(50)	No		
po_img	Varchar(255)	No		



---

date_created	datetime	No	CurrentTimeStamp()
last_update	datetime	No	

---

Table 8 shows the purchased order table, it stores details of the requested items made by the user. This table includes the purchased\_order\_id as its primary key. User\_id, supplier\_id and purchase\_request\_id as its foreign key. It also features attributes such as purchased\_order\_number, purchased\_order\_date, project\_ref\_no, project\_name, place\_of\_delivery, date\_delivered, date\_delivered, po\_img, date\_created and last\_update.

**Table 9**  
*Purchase Order Item*

---

Column	Type	Null	Default	Comments
purchase_order_item_id (primary)	int(11)	No		
purchased_order_id (foreign)	int(11)	No		
requested_item_id (foreign)	int(11)	No		
unit_cost	decimal(10,2)	No		
total_order_cost	decimal(10,2)	No		
quantity_purchased	decimal(10,2)	No		
date_created	datetime		current timestamp()	

---



Table 9 shows the Purchase Order Item table, stores the details of the Purchase Order Item of the system. This table includes the purchase\_order\_item\_id as its primary key, purchased\_order\_id and requested\_item\_id as a foreign key. It also features attributes such as unit\_cost, total\_order\_cost and quantity\_purchased.

**Table 10**

*Supply*

Column	Type	Null	Default	Comments
supply_id(primary)	int(11)	No		
user_id(foreign)	int(11)	No		
requested_item_id	int(11)	No		
category_id	int(11)	No		
item_name	varchar(50)	No		
item_code	varchar(255)	No		
UOM	varchar(20)	No		
quantity_on_hand	int(20)	No		
reorder_threshold	int(20)	No		
action_taken	varchar(255)	No		
date_created	datetime	No	CurrentTimeStamp()	
last_update	datetime	No	current timestamp()	

Table 10 shows the Supply table, stores the supplies in the system. This



table includes the supply\_id as its primary key and user\_id as foreign key. It also features attributes such as requested\_item\_id, category\_id, item\_name, item\_code, UOM, quantity\_on\_hand, reorder\_threshold, action\_taken, date\_created and last\_update.

**Table 11**

*Withdrawal*

Column	Type	Null	Default	Comments
withdrawal_id (primary)	int(11)	No		
user_id (foreign)	int(11)	No		
supply_id	int(11)	No		
quantity	int(11)	No		
date_created	datetime	No	CurrentTimeStamp()	
last_updated	datetime	No	current timestamp()	

Table 11 shows the Withdrawal table, stores the withdrawals made in the system. This table includes the withdrawal\_id as its primary key, and user\_id as foreign key. It also features attributes such as supply\_id, quantity, date\_created, and last\_updated.

**Table 12**

*Receipt*

Column	Type	Null	Default	Comments
purchased_receipt_id (primary)	int(11)	No		



---

user_id(foreign)	int(11)	No
purchased_order_id	int(11)	No
receipt_num	varchar(20)	No
delivered_by	varchar(50)	No
received_by	varchar(255)	No
date_received	varchar(20)	No
receipt_img	varchar(255)	No
date_created	varchar(20)	No current timestamp()

---

Table 12 shows the Receipts able, stores the Purchase Order Receipts. This table includes the purchased\_receipt\_id as its primary key and user\_id as foreign key. It also features attributes such purchased\_order\_id, receipt\_num, delivered\_by, received\_by, date\_received, receipt\_img abd date\_created.

**Table 13**  
*Reports*

Column	Type	Null	Default	Comments
report_id (Primary) (primary)	int(11)	No		
user_id(foreign)	int(11)	No		
file_path	VARCHAR(50)	No		
date_generated	datetime	No	current timestamp()	

Table 13 shows the Reports table, this table includes the report\_id as its



---

primary key and user\_id as foreign key. It also features attributes such file\_path and date\_generated.

### **Respondents of the Study**

This section focuses on the individuals who will participate in the study in order to explore their perspectives and opinions. By understanding their demographics and backgrounds, the researchers aim to understand their relevance and how their insights contribute to the completion of the study.

For the system testing, each user will be asked to test the system's prototype in accordance with their role. The CSWD staff will test the prototype if it is able to Login as a CSWD all of the inventory details, view the welfare center details, view purchase order lists, view the performance metrics, send feedback, send purchase requests and do all the CSWD staff abilities.

The Welfare Center OICs will be asked to test the system's prototype by logging in as a Welfare Center OIC, send purchase requests, input inventory into the system, view the inventory of the center, view purchase receipts, receive stock alerts and do all of its responsibilities in the system.

The CSWD Head will be asked to test the system's prototype by logging in as a CSWD Head, sending remarks and viewing reports. Similarly, the supplier will also be asked to test the prototype.



**Table 14**

*Distribution of Respondents by Frequency and Percentage*

Respondents	Frequency	Percentage
CSWD Staff	2	13.33%
CSWD Head	1	6.67%
Welfare Center OICs	12	80%
<b>Total</b>	<b>15</b>	<b>100%</b>

The table depicts the distribution of respondents involved in the evaluation of the system based on their respective roles. Among the total 15 respondents, 12, or 80%, were Welfare Center Officers-in-Charge (OICs), indicating the critical responsibility of managing the inventory of the respective centers. In this regard, the respondents of CSWD Staff include 2 (13.33%), which is also responsible for the management of inventories and other administrative jobs, and 1 CSWD Head (6.67%), which is held by the person responsible for strategic oversight and decision making.

This deployment emphasizes feedback from Welfare Center OICs because the Welfare Center OICs are primary users of the system and should ensure that functionality and usability of the system is tested by those most directly involved in day-to-day operations.

### **Data Gathering Procedures**

To gather the necessary information, the researchers collected data on



existing systems relevant to their study and identified the required research materials. They reviewed related literature and studies pertinent to the topic and conducted interviews with personnel responsible for inventory and monitoring procedures using open-ended questions. The collected data was then organized, interpreted, and analyzed. Utilizing the Rapid Application Development (RAD) approach, the researchers will ask the CSWD office staff, Head, and welfare center OICs to test the prototype and provide feedback for system improvement. After the testing, the researchers will distribute questionnaires to these end users, asking them to complete a scaled assessment of the system. This feedback will be used for further evaluation.

### **Research Instrument**

The research instrument used in this study was a formal interview with the CSWD office using open-ended questions. This method was chosen to gather accurate information directly from the officials or personnel responsible for inventory and monitoring procedures. The interview provided detailed and valuable information essential to the study.

The researchers will use the ISO/IEC 25010 quality modeling approach to assess the proposed system. By referencing existing related literature and utilizing various software quality tools, the researchers aim to demonstrate the effectiveness of this approach. Software Quality Questionnaire was used to assess various characteristics of software quality that are aligned with ISO 25010. ISO



25010 measures the quality based on basic aspects such as Functional Suitability, Reliability, Usability, Performance Efficiency, Maintainability, and so on. In the survey, a Likert scale is used from respondents who have answered and were rated based on a strong disagreement, strongly agreed from 1 to 5. In this study, the system's quality evaluation will be conducted at the CSWD office and other welfare center premises using the ISO/IEC 25010 standard.

### **Research Method**

This research was conducted in order to determine whether the formal interview to the CSWD played a significant role in the study. This method was chosen to gather factual information directly from the office regarding their control measures and operational processes for handling inventory and monitoring for the office and its welfare centers.

The descriptive research method is commonly acknowledged as a study focused on gathering facts, ensuring thorough and precise interpretation of its findings. Descriptive research was used to observe and describe behaviors in their natural settings. It uses various methods depending on the specific questions being asked, aiming to accurately detail populations, situations, or events. This type of research focuses on gathering and organizing data to answer questions like what, where, when, and how things happen, rather than why they occur [22].

### **Software Requirements**

These are the basic software requirements needed for efficient installation



and use of the software. Below are the following software requirements in developing this project.

- Front End development (User Interface): HTML 5, PHP and CSS.
- Server Language: PHP
- Back End development: PHP
- Software IDE: VScode

### **Testing Procedures**

To test and evaluate the proposed system, researchers, along with authorized CSWD staff, the CSWD head, and welfare center OICs, will conduct tests collaboratively. During the testing phase, users will perform specific tasks within the system and provide feedback, utilizing the Rapid Application Development (RAD) approach for continuous improvements. Additionally, they will complete a survey assessing the system's usability based on ISO/IEC 25010 standards. By combining the RAD and ISO/IEC 25010 approaches, the evaluation and refinement of the proposed system will be thorough, ensuring it meets the needs of the CSWD.

### **Scoring Procedures**

To interpret the assessment questionnaires based on ISO/IEC 25010, the researchers will follow the recommended scoring procedures set out by the International Standard. This approach ensures that our evaluation aligns with global best practices, providing reliable and accurate insights into the quality of



the proposed system. These methodologies are used to compute the metrics, such as the Mean and Standard Deviation, and discusses the structure of the software quality questionnaire based on ISO 25010. These computations and the survey design are integral in deriving the overall descriptive ratings and ensuring that the interpretations of software quality are accurate after the presentation of the software quality results.

**Table 15**

*Interpretation Table per Variable of the Software Quality based on ISO 25010*

Values	Scale	Range of Mean	Descriptive Equivalent
Functionality	5	4.20 – 5.00	Extremely Functional
	4	3.40 – 4.19	Moderately Functional
	3	2.60 – 3.39	Somewhat Functional
	2	1.80 – 2.59	Slightly Functional
	1	1.00 – 1.79	Not Functional
	Performance Efficiency	4.20 – 5.00	Extremely Efficient
Suitability	4	3.40 – 4.19	Moderately Efficient
	3	2.60 – 3.39	Somewhat Efficient
	2	1.80 – 2.59	Slightly Efficient
	1	1.00 – 1.79	Not Efficient
	5	4.20 – 5.00	Extremely Compatible



Compatibility	4	3.40 – 4.19	Moderately Compatible
	3	2.60 – 3.39	Somewhat Compatible
	2	1.80 – 2.59	Slightly Compatible
	1	1.00 – 1.79	Not Compatible
Interaction Capability	5	4.20 – 5.00	Extremely Capable
	4	3.40 – 4.19	Moderately Capable
	3	2.60 – 3.39	Somewhat Capable
	2	1.80 – 2.59	Slightly Capable
Reliability	1	1.00 – 1.79	Not Capable
	5	4.20 – 5.00	Extremely Reliable
	4	3.40 – 4.19	Moderately Reliable
	3	2.60 – 3.39	Somewhat Reliable
Security	2	1.80 – 2.59	Slightly Reliable
	1	1.00 – 1.79	Not Reliable
	5	4.20 – 5.00	Extremely Secure
	4	3.40 – 4.19	Moderately Secure
	3	2.60 – 3.39	Somewhat Secure
	2	1.80 – 2.59	Slightly Secure



Maintainability	1	1.00 – 1.79	Not Secure
	5	4.20 – 5.00	Extremely Maintainable
	4	3.40 – 4.19	Moderately Maintainable
	3	2.60 – 3.39	Somewhat Maintainable
	2	1.80 – 2.59	Slightly Maintainable
	1	1.00 – 1.79	Not Maintainable
Flexibility	5	4.20 – 5.00	Extremely Flexible
	4	3.40 – 4.19	Moderately Flexible
	3	2.60 – 3.39	Somewhat Flexible
	2	1.80 – 2.59	Slightly Flexible
	1	1.00 – 1.79	Not Flexible
Safety	5	4.20 – 5.00	Extremely Safe
	4	3.40 – 4.19	Moderately Safe
	3	2.60 – 3.39	Somewhat Safe
	2	1.80 – 2.59	Slightly Safe
	1	1.00 – 1.79	Not Safe



This table provides an interpretation of the software quality metrics for each of the variables assessed using the ISO 25010 standard. Then, the computed mean scores are converted into descriptive ratings that clearly present a view of the system's performance with regard to functionality, usability, reliability, and other quality characteristics.

**Table 16**  
*Software Quality Interpretation Table*

Range of Mean	Descriptive Rating
4.20 - 5.00	Extreme Quality
3.40 - 4.19	High Quality
2.60 - 3.39	With Quality
1.8 - 2.59	Minimal Quality
1.00 - 1.79	Low Quality

The table 16 describes the descriptive ratings provided to different ranges of mean scores based on the ISO 25010 software quality evaluation. It gives a basis for the interpretation of the quality of the system. The ratings range from "Low Quality" for scores between 1.00 and 1.79 up to "Extreme Quality" for scores between 4.20 and 5.00.



## Chapter 4

### RESULTS AND DISCUSSIONS

This chapter covers the graphical user interface of the developed system and the Software Quality Results based on ISO 25010 quality standards. Each part of the system will be discussed thoroughly in this chapter to have a clearer understanding of the system and the functions that it offers.

#### **Discussion of Prototype**

##### **Iligan CSWD Inventory Management and Monitoring System**

All the features and images on the Web based system. The system will be used by the Center Office In charge, CSWD Head and CSWD Staff. The Center Officer In charge which will be using the system, they can view their stocks of their inventory, their own purchase request and view purchase orders. As for the CSWD Staff, they are able to create accounts, create centers and be able to view the stocks of all of the center's inventory. While the CSWD Head Oversee and monitor the day-to-day operations within the system.

#### **The Graphical User Interface**

Shown in this section are the screenshot of the two different user interfaces from the web-based that each distinctive users throughout the use of the system.



**Figure 10** Login Page

This shows the login page of all the users of the system. They are all required to login in order to have access to the system. The login info will be retrieved from the database.

DASHBOARD

Welcome Back! Krish Lorejo

Requested Items by Category

Category	Count
FOOD	4.0
PAPER	1.0

Low Stock Items

Item Name	Quantity On Hand	Reorder Threshold
bondpaper long	8	100
111	00	00

**Figure 11** Center OIC Dashboard 1



The screenshot shows the CSWD Inventory Management System dashboard. On the left is a sidebar with navigation links: Dashboard, Inventory (which is selected), Purchased Requests, Purchased Orders, Reports, and Logout. The main content area has two sections. The top section, titled "Low Stock Items", contains a table with columns: Item Name, Quantity On Hand, and Reorder Threshold. The table shows four items: bondpaper long (8, 100), chicken (30, 100), cornbeef (100, 100), and Sardines (50, 100). Below this is a message "Showing 1 to 4 of 4 entries" and a navigation bar with Prev, 1, and Next buttons. The bottom section, titled "Purchase Request Status", contains a table with columns: Status and Number of Requests. It shows one entry: approved (2). Below this is a message "Showing 1 to 1 of 1 entries" and a navigation bar with Prev, 1, and Next buttons.

Figure 12 Center OIC Dashboard 2

This figure shows the Dashboard of the Center Officer In charge. This shows important information about their inventory in their centers. It features graphs for requested items, and tables for their items. The inventory will be retrieved from the database.

The screenshot shows the CSWD Inventory Management System inventory page. The sidebar on the left is identical to Figure 12. The main content area is titled "INVENTORY". At the top right, it says "Welcome Back! Krish Lorejo" with a profile icon. Below that are buttons for "+ Withdrawal Form", "View Supply Categories", "Print", and "Download". The main area is titled "Supplies" and contains a table with columns: #, Category, Item Name, Item Code, UOM, Quantity On Hand, Item Threshold, Image, Date Created, Last Update, and Status. The table shows four items: 1. FOOD cornbeef item\_8488 kg 100 100 (green checkmark) 2. FOOD chicken item\_7332 kg 30 100 (red exclamation mark) 3. PAPER bondpaper long item\_5094 ream 8 100 (red exclamation mark) 4. FOOD Sardines item\_8164 can 50 100 (red exclamation mark). Below the table is a message "Showing 1 to 4 of 4 entries" and a navigation bar with Prev, 1, and Next buttons.

Figure 13 Center OIC Inventory



This figure shows the Inventory of the Center in which the Officer In charge is assigned. It shows a table of the available items from their inventory. It allows them to see an image of their item when they click the “view image button”. The user will be able to make a withdrawal form, view supply categories, print and download.

The screenshot shows a computer interface for managing inventory. On the left, a 'Save As' dialog box is open, prompting the user to save a file named 'supply\_inventory\_report\_4\_1734256135.pdf' to the 'Documents' folder. The main window displays a table of inventory items with columns for Name, Status, Quantity On Hand, Item Threshold, Image, Date Created, Last Update, and Status. The table contains four entries:

Name	Status	Quantity On Hand	Item Threshold	Image	Date Created	Last Update	Status
activity 4 - django sas	Green	100	100		2024-12-11 14:37:46	2024-12-13 10:10:13	Green checkmark
Arduino	Green	30	100		2024-12-11 14:37:46	2024-12-11 14:37:46	Red exclamation mark
Bandicam	Green	8	100		2024-12-11 14:37:46	2024-12-11 14:37:46	Red exclamation mark
Custom Office Templates	Green	50	100		2024-12-13 10:08:58	2024-12-13 10:08:58	Red exclamation mark

At the top right of the main window, there are buttons for '+ Withdrawal Form', 'View Supply Categories', 'Print', and 'Download'. A search bar is also present at the top right.

**Figure 14** Center OIC Download Inventory

This panel shows the user to download the generated contents of the center's inventory together with the withdrawal history. It will save into their computer's storage as a PDF file.



The PDF document contains the following information:

**Supply and Withdrawal Report**

Center Oic: Krish Lorejo  
Position: DCWD II  
Welfare Center: The Children Assessment Processing Center (OSAEC)

**Supply Items**

Category	Item Name	Item Code	UOM	Quantity On Hand	Reorder Threshold
FOOD	cornbeef	item_8488	kg	100	100
FOOD	chicken	item_7332	kg	30	100
PAPER	bondpaper long	item_5094	ream	8	100
FOOD	Sardines	item_8164	can	50	100

**Withdrawal Items**

Category	Item Name	Item Code	UOM	Quantity Withdrawn	Date Created
FOOD	cornbeef	item_8488	kg	-10	2024-12-11 10:36:43
FOOD	cornbeef	item_8488	kg	-30	2024-12-13 03:10:13

Prepared By: Krish Lorejo      Noted By: Jennifer B. Moran, RSW

Figure 15 Center OIC Print Inventory

This figure generates a pdf document of the center's inventory. All contents from the center's inventory from the database is the same but in PDF format.

The screenshot shows the 'SUPPLY CATEGORIES' page of the CSWD Inventory Management System. The left sidebar includes links for Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, and Logout. The main content area displays a table of supply categories:

#	Category Name	description	Actions
1	FOOD	Fresh, tasty meals for everyone.	<button>Edit</button> <button>Delete</button>
2	PAPER	This category includes various types of paper used for printing, photocopying, and general office work, such as bond paper, ruled paper, and specialized papers.	<button>Edit</button> <button>Delete</button>
3	RECORD BOOKS & NOTEBOOKS	Includes bound and spiral notebooks, logbooks, ledgers, and other record books used for tracking information, documenting processes, and recording daily transactions or activities.	<button>Edit</button> <button>Delete</button>
4	SOAP/DETERGENT	Includes all types of soaps, hand washes, detergents, and disinfectants used for cleaning and sanitation purposes. These supplies are essential for maintaining hygiene in the workplace.	<button>Edit</button> <button>Delete</button>
5	STATIONERY	this is supplies that includes paper, pens, pencils, notebooks, folders, and other office materials used for writing, printing, and general administrative tasks.	<button>Edit</button> <button>Delete</button>

Showing 1 to 5 of 6 entries

Figure 16 Center OIC View Supply Categories



This page is the categories of supplies found in the inventory table. This helps sort the items inside the table to be categorized. This can be added, edited and deleted.

The screenshot shows the 'CSWD Inventory Management System' interface. On the left, a dark sidebar menu includes 'Dashboard', 'Inventory' (which is highlighted), 'Purchased Requests', 'Purchased Orders', 'Reports', and 'Logout'. The main content area has a header 'ADD CATEGORY' with a back arrow. It displays a form titled 'Add Category' with fields for 'Category Name:' (containing 'Category Name') and 'Description:' (containing 'Description'). A blue 'Add Category' button is at the bottom. In the top right corner, it says 'Welcome Back! Krish Lorejo' with a profile icon.

**Figure 17** Center OIC Add Category

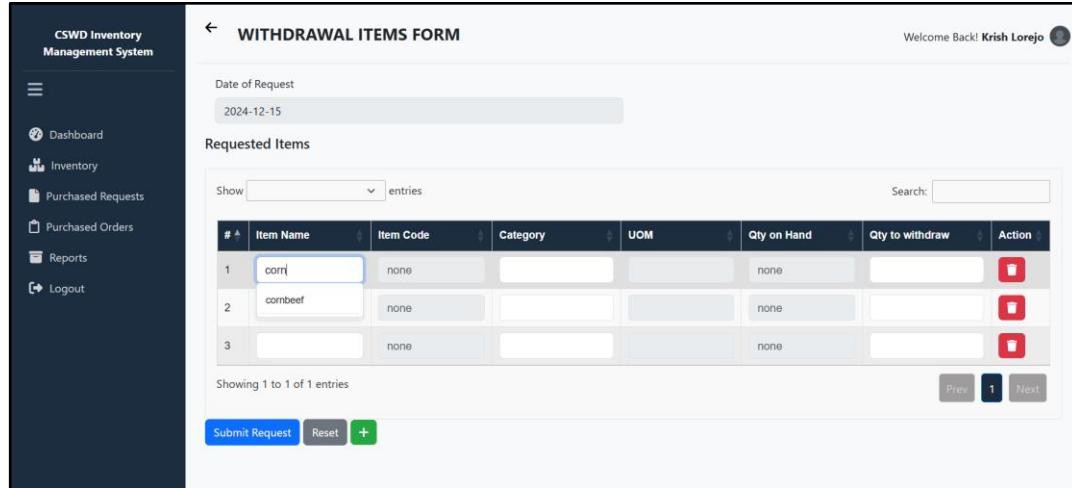
This figure shows the panel to add the category for the items in the inventory. It holds the value of the name and its description.

The screenshot shows the 'CSWD Inventory Management System' interface. The sidebar menu is identical to Figure 17. The main content area displays two tables. The top table is titled 'Inventory' and lists items with columns: #, Category, Item Name, Code, UOM, Hand, Threshold, Image, Date Created, Last Update, and Status. It shows 4 entries: 1. FOOD cornbeef item\_8488 kg 100 100 [View Image] 2024-12-11 14:37:46 2024-12-13 10:10:13 ✓, 2. FOOD chicken item\_7332 kg 30 100 [View Image] 2024-12-11 14:37:46 2024-12-11 14:37:46 !, 3. PAPER bondpaper long item\_5094 ream 8 100 [View Image] 2024-12-11 14:37:46 2024-12-11 14:37:46 !, 4. FOOD Sardines item\_8164 can 50 100 [View Image] 2024-12-13 10:08:58 2024-12-13 10:08:58 !. Below this table is a message 'Showing 1 to 4 of 4 entries' and navigation buttons 'Prev' (disabled), '1', and 'Next'. The bottom table is titled 'Withdrawal History' and lists withdrawals with columns: #, Category, Item Name, Item Code, UOM, Qty Withdrawn, Date Created, and Last Update. It shows 2 entries: 1. FOOD cornbeef item\_8488 kg -10 2024-12-11 10:36:43 2024-12-11 10:36:43, 2. FOOD cornbeef item\_8488 kg -30 2024-12-13 03:10:13 2024-12-13 03:10:13. Below this table is a message 'Showing 1 to 2 of 2 entries' and navigation buttons 'Prev' (disabled), '1', and 'Next'.

**Figure 18** Center OIC Withdrawal History



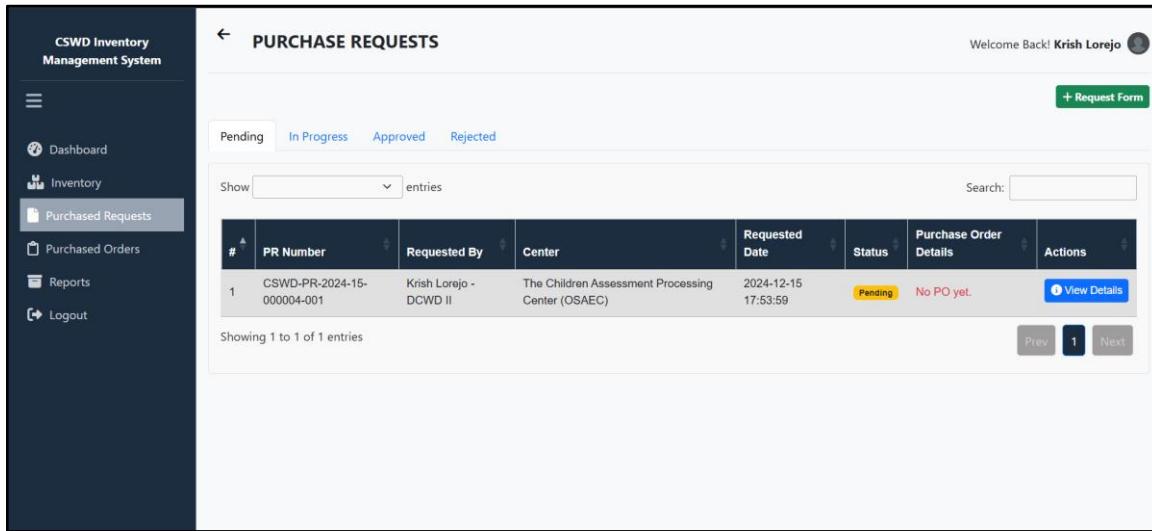
This figure shows the withdrawal history table. The table represents the history of when the user withdrew items from the inventory supply.



The screenshot shows the 'WITHDRAWAL ITEMS FORM' page. The left sidebar lists navigation options: Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, and Logout. The main area has a header 'WITHDRAWAL ITEMS FORM' with a back arrow. It displays a table titled 'Requested Items' with columns: #, Item Name, Item Code, Category, UOM, Qty on Hand, Qty to withdraw, and Action. The table contains three entries: 1. corr (Item Name), none (Category), none (UOM), none (Qty on Hand), none (Qty to withdraw), and a red square icon in the Action column. 2. cornbeef (Item Name), none (Category), none (UOM), none (Qty on Hand), none (Qty to withdraw), and a red square icon in the Action column. 3. (empty) (Item Name), none (Category), none (UOM), none (Qty on Hand), none (Qty to withdraw), and a red square icon in the Action column. Below the table, it says 'Showing 1 to 1 of 1 entries'. At the bottom are buttons for 'Submit Request', 'Reset', and a green '+' button.

**Figure 19** Center OIC Withdrawal Items Form

This figure shows the withdrawal item form for when the user wants to withdraw an item from the inventory.



The screenshot shows the 'PURCHASE REQUESTS' page. The left sidebar lists navigation options: Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, and Logout. The main area has a header 'PURCHASE REQUESTS' with a back arrow. It displays a table with columns: #, PR Number, Requested By, Center, Requested Date, Status, Purchase Order Details, and Actions. The table contains one entry: 1. CSWD-PR-2024-15-000004-001 (PR Number), Krish Lorejo - DCWD II (Requested By), The Children Assessment Processing Center (OSAEC) (Center), 2024-12-15 17:53:59 (Requested Date), Pending (Status), No PO yet. (Purchase Order Details), and a blue 'View Details' button in the Actions column. Below the table, it says 'Showing 1 to 1 of 1 entries'. At the top right is a green '+ Request Form' button.

**Figure 20** Center OIC Purchase Request Page



This figure shows the panel of the pending purchase requests made by the Center Officer In charge. They are also able to view the In Progress, Approved and Rejected Purchase Requests.

The screenshot displays the 'PURCHASE REQUESTS' page of the CSWD Inventory Management System. On the left, a sidebar menu includes 'Dashboard', 'Inventory', 'Purchased Requests', 'Purchased Orders', 'Reports', and 'Logout'. The main content area shows a table of purchase requests with two items:

#	Item Name	Item Code	Category	UOM	Quantity on Hand	Required Quantity	Quantity to be Purchased	Budget Amount	Total	Image
1	cornbeef	item_8488	FOOD	kg	100	50	50	P 69	P 3450	
2	Downy surf	item_3431	SOAP/DETERGENT	pcs	0	100	100	P 70	P 7000	

Details for the first item (cornbeef):  
Purchase Request Number: CSWD-PR-2024-15-000004-001  
Requested By: Krish Lorejo  
Position: DCWD II  
Last Updated: 2024-12-15 17:53  
Reason for Request: basta  
Justification File: [View PDF](#)

Status: PENDING  
Center: The Children Assessment Processing Center (OSAEC)  
Requested Date: 2024-12-15 00:00  
Approval Date: 2024-12-15 17:53  
Remarks:

Show: entries Search:

Showing 1 to 2 of 2 entries

Figure 21 Center OIC Purchase Request Details

This panel shows the details of the purchase request made by the user. It also allows the function to view the image of every item.

The screenshot shows a modal window titled 'Item Image: cornbeef' displaying a photograph of a package of Laura's Lean Beef ground beef. The package is labeled 'All Natural 90% LEAN 10% FAT' and 'NEVER EVER ADDED HORMONES OR ANTIOTICS'. The main page background shows the same purchase request details as Figure 21.

Figure 22 Center OIC View Image Item



This is the panel where the user can view the image of the item that the user requested.

The screenshot shows the CSWD Inventory Management System interface. On the left is a sidebar with options like Dashboard, Inventory, Purchased Req, Purchased Ord, Reports, and Logout. The main area is titled 'PURCHASE REQUESTS' and displays a list of items. A 'Save As' dialog box is open over the list, showing a file path 'One... / Doc... /' and a file name 'purchased\_request\_report\_4\_1734257331.pdf'. The list includes items such as 'Downy surf', 'item\_3431', 'SOAP/DETERGENT', 'pcs', '100', '50', '50', '₱ 69', '₱ 3450', and two 'View Image' buttons. At the top right of the main area, there are buttons for Edit, Delete, Print, and Download. The status is listed as 'PENDING'. Center information includes 'The Children Assessment Processing Center (OSAEC)', 'Requested Date: 2024-12-15 00:00', and 'Approval Date: 2024-12-15 17:53'. Remarks are listed as 'Remarks:'. A search bar is at the bottom right.

Figure 23 Center OIC Download Purchase Request

This panel shows the user to download the softcopy of the purchase request made by the center. It will save into their computer's storage as a PDF file.

The screenshot shows the 'Purchase Request Details' page of the CSWD Inventory Management and Monitoring System. On the left, there is a thumbnail preview of the document. The main content area has a header 'Purchase Request Details' and a sub-header 'General Information'. It lists details such as Request Number: CSWD-PR-2024-15-000004-001, Requested By: Krish Lorejo, Requested Date: 2024-12-15, Center: The Children Assessment Processing Center (OSAEC), Status: pending, Date of Request: 2024-12-15, and Purpose: basta. Below this is a section titled 'Requested Items' with a table:

#	Item Name	Item Code	UOM	Quantity on Hand	Required Quantity	Quantity to be Purchased	Budget Amount	Total
1	cornbee ff	item_84 88	kg	100	50	50	₱69.00	₱3,450.00
2	Downy surf	item_34 31	pcs	0	100	100	₱70.00	₱7,000.00

At the bottom, there are buttons for 'Prepared By:' and 'Noted By:'.

Figure 24 Center OIC Print Purchase Request



This features the Soft Copy version of the center's purchase request. All contents from the center's purchase request from the database is the same but in PDF format.

The screenshot shows the 'Edit Purchase Request' page. On the left is a sidebar with 'CSWD Inventory Management System' and links for Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, and Logout. The main area has a header 'EDIT PURCHASE REQUEST' and 'Welcome Back! Krish Lorejo'. It includes fields for 'Purpose' (basta), 'Justification (i.e., budget alignments, reports, supporting documents)', 'Date of Request' (2024-12-15), 'Date Needed' (17/12/2024), and a 'Requested Items' table. The table has columns: #, Category, Item Name, Item Code, UOM, Qty on Hand, Required Qty, Qty to be Purchased, Unit Price, Total, Attachment (optional), Preview, and Action. It lists two items: 'FOOD' (com) and 'SOAP/C' (Dow).

**Figure 25** Center OIC Edit Purchase Request Form

This features the panel of the editing of the purchase request form. The user will be able to edit the request whenever they want.

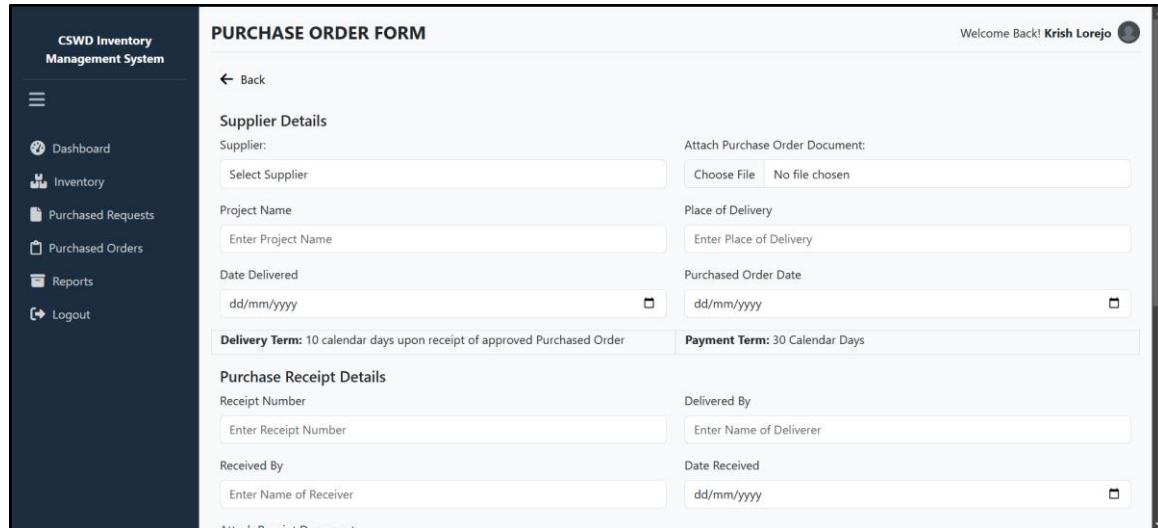
The screenshot shows the 'Purchase Requests' page with the 'Approved' tab selected. The sidebar is identical to Figure 25. The main area has a header 'PURCHASE REQUESTS' and 'Welcome Back! Krish Lorejo'. It includes tabs for Pending, In Progress, Approved (selected), and Rejected. It shows a table of purchase requests with columns: #, PR Number, Requested By, Center, Requested Date, Status, Purchase Order Details, and Actions. Three entries are listed, all marked as Approved:

#	PR Number	Requested By	Center	Requested Date	Status	Purchase Order Details	Actions
1	CSDW-PR-2024-15-000004-001	Krish Lorejo - DCWD II	The Children Assessment Processing Center (OSAEC)	2024-12-15 18:36:55	Approved	No PO yet.	<a href="#">View Details</a> <a href="#">Generate PO</a>
2	CSDW-PR-2024-13-000004-001	Krish Lorejo - DCWD II	The Children Assessment Processing Center (OSAEC)	2024-12-13 10:05:14	Approved	PO Number: CSDW-PO-2024-347-364216-238 PO Date: 2024-12-14	<a href="#">View Details</a>
3	CSDW-PR-2024-10-000004-001	Krish Lorejo - DCWD II	The Children Assessment Processing Center (OSAEC)	2024-12-10 20:56:49	Approved	PO Number: CSDW-PO-2024-345-021112-168 PO Date: 2024-12-09	<a href="#">View Details</a>

**Figure 26** Center OIC Approved Tab Purchase Request Page



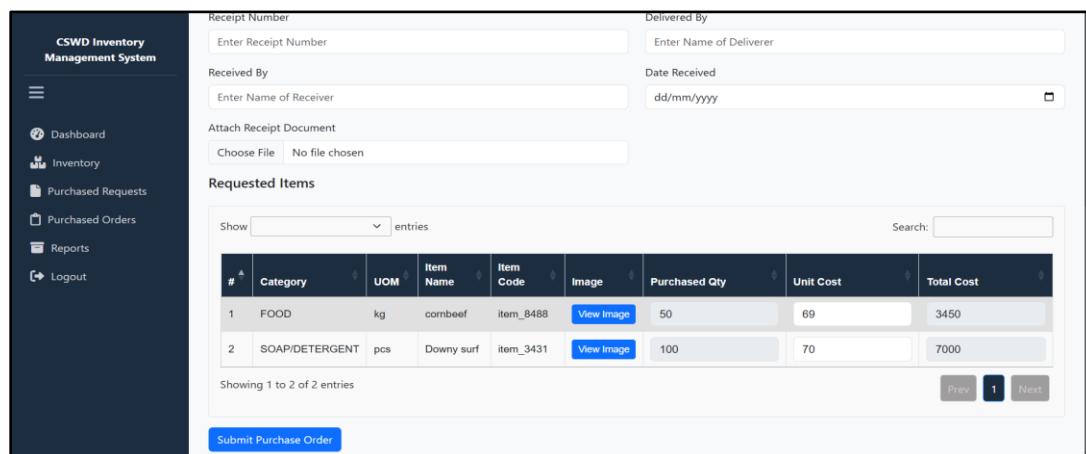
This panel shows the approved purchase request that the user from the center made.



The screenshot shows the 'PURCHASE ORDER FORM' page of the CSWD Inventory Management System. The left sidebar includes links for Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, and Logout. The main form has sections for 'Supplier Details' (Supplier dropdown, Project Name, Date Delivered, Delivery Term: 10 calendar days upon receipt of approved Purchased Order), 'Purchase Receipt Details' (Receipt Number, Received By, Date Received), and file attachments (Attach Purchase Order Document, Choose File, No file chosen; Attach Receipt Document, Choose File, No file chosen). A welcome message 'Welcome Back! Krish Lorejo' is at the top right.

**Figure 27** Center OIC Generate Purchase Order

This panel features the form of generating the purchase order that the user will make after the purchase request has been approved and the requested items are delivered to their respective centers along with the physical document of purchase orders.



The screenshot shows the 'Requested Items' section of the same form. It includes fields for 'Receipt Number' (Enter Receipt Number, Attach Receipt Document, Choose File, No file chosen), 'Received By' (Enter Name of Receiver, Date Received, dd/mm/yyyy), and a table for 'Requested Items'. The table has columns for #, Category, UOM, Item Name, Item Code, Image, Purchased Qty, Unit Cost, and Total Cost. Two entries are listed: FOOD (kg, cornbeef, item\_8488, View Image, 50, 69, 3450) and SOAP/DETERGENT (pcs, Downy surf, item\_3431, View Image, 100, 70, 7000). Navigation buttons Prev, 1, Next are at the bottom, and a 'Submit Purchase Order' button is at the bottom left.

**Figure 28** Center OIC Generate Purchase Order



This panel features the form of generating the purchase order that the user will make. After this the items that the user imputed will be stored in the Inventory Supply.

#	Category	Item Name	Item Code	UOM	Qty on Hand	Required Qty	Qty to be Purchased	Unit Price	Total	Attachment (optional)	Preview	Action
1	FOOD	comb	item_	kg	100	50	50	59	29	Choose File		
2	STATION	noteb	none	box	none	50	50	89	44	Choose File		
3	Select Ci	bond	none	none	none					Choose File		

**Figure 29** Center OIC Purchase Request Form

This panel features the form of the purchase request made by the user. They will input all of the information of the product that they will request. This system has autosuggestion where it fetches the existing supply items when you type the item name, it will then auto fill the existing data such as the unit of measurement (UOM) and quantity on hand.



PURCHASE ORDERS											
Purchase Orders											
Center	Purchased Order #	Supplier	Address	Contact #	TIN	purchased Order Date	Delivered To	Date Delivered	Image Attachment	Last Updated	Actions
The Children Assessment Processing Center (OSAEC)	CSWD-PO-2024-347-364216-238	C And M ENTERPRISES	Fr. Burgos St, Iligan City, Lanao Del Norte	(063) 221 5580	293-745-621	2024-12-14	Center	2024-12-14	<a href="#">View Image</a> <a href="#">Download File</a>	2024-12-13 10:08:58	<a href="#">View Items</a>
The Children Assessment Processing Center (OSAEC)	CSWD-PO-2024-345-021112-168	C And M ENTERPRISES	Fr. Burgos St, Iligan City, Lanao Del Norte	(063) 221 5580	293-745-621	2024-12-09	Hakdoogg	2024-12-12	<a href="#">View File</a> <a href="#">Download File</a>	2024-12-11 16:05:41	<a href="#">View Items</a>

Figure 30 Center OIC Purchase Orders Page

This panel features the purchase order. It shows the details of the purchase orders that the user made.

PURCHASE ORDER DETAILS											
Purchase Order Details											
Purchase Order Number: CSWD-PO-2024-345-021112-168						Prepared By: Krish Lorejo - DCWD II					
Center: The Children Assessment Processing Center (OSAEC)						Last Updated: 2024-12-11 16:05					
PO Date: 2024-12-09 00:00						PO Document: <a href="#">View PDF</a>					
Receipt Number: 1233123131						Delivered By: 1970-01-01					
Received By: 1970-01-01						Receipt Date: 2024-12-12					
Receipt Document: <a href="#">View PDF</a>											
Purchase Order Details											
#	Category	Item Name	Item Code	UOM	Qty to be Purchased	Unit Cost	Total	Image	Edit	Delete	Print
1	FOOD	combeef	item_8488	kg	40	₱ 100.00	₱ 4000.00	<a href="#">View Image</a>	<input checked="" type="checkbox"/>	<a href="#">Delete</a>	<a href="#">Print</a>
2	FOOD	chicken	item_7332	kg	30	₱ 219.00	₱ 6570.00	<a href="#">View Image</a>	<input checked="" type="checkbox"/>	<a href="#">Delete</a>	<a href="#">Print</a>
3	PAPER	bondpaper long	item_5094	ream	8	₱ 319.00	₱ 2552.00	<a href="#">View Image</a>	<input checked="" type="checkbox"/>	<a href="#">Delete</a>	<a href="#">Print</a>

Figure 31 Center OIC Purchase Orders Page

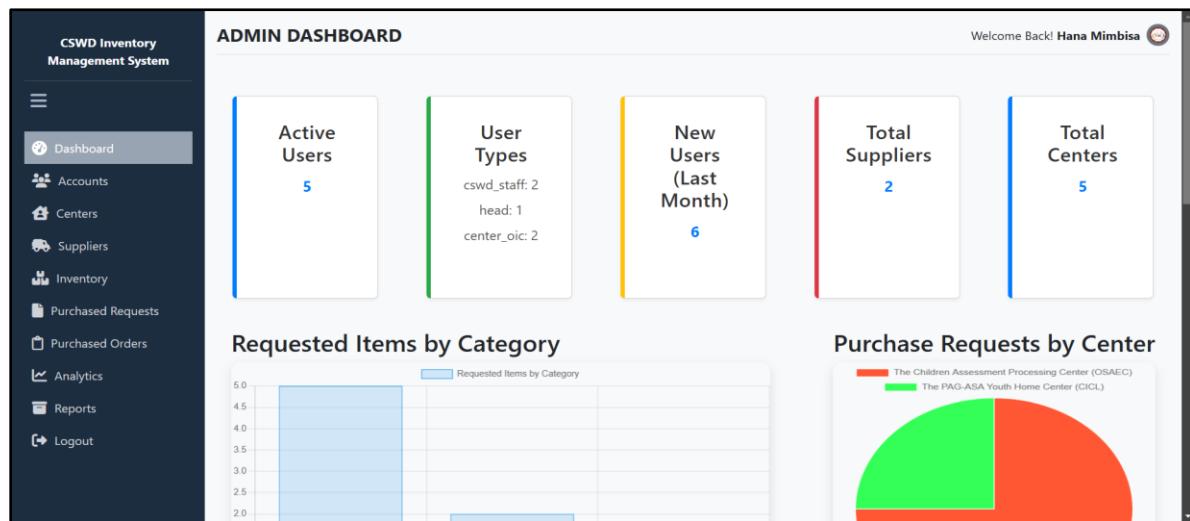
This panel features the details of the purchase order that the user made. It also features the ability to edit, delete, print and download.



The screenshot shows the 'Edit Profile Settings' page of the CSWD Inventory Management System. On the left is a dark sidebar with navigation links: Dashboard, Inventory, Purchased Requests, Purchased Orders, Reports, Settings (which is selected), and Logout. The main area has a header 'EDIT PROFILE SETTINGS' and a sub-header 'Edit Profile'. It contains fields for First Name ('The Children Assessment Processing Center (OSAEC)'), Last Name ('krish'), Email ('lorejokrish@gmail.com'), Phone ('098765123456'), and a note ('kring'). Below these are password fields ('Enter Current Password' and 'New password') with a 'Save' button at the bottom.

**Figure 32** Center OIC Edit Profile Settings

This feature where the user can update their user profile and save them.



**Figure 33** CSWD Staff Dashboard 1



The screenshot shows the CSWD Inventory Management System dashboard. On the left, a sidebar menu lists: Dashboard, Accounts, Centers, Suppliers, Inventory, Purchased Requests, Purchased Orders, Analytics, Reports, and Logout. The main content area has two tables. The top table, titled 'Center', lists items like cornbeef, chicken, bondpaper long, and sardines with their respective categories (FOOD or PAPER), quantities on hand (e.g., 100, 30, 8, 50), and reorder thresholds (e.g., 100). The bottom table, titled 'Purchase Request Status by Center', shows requests from three centers: OSAEC (pending: 1, approved: 2) and CICL (approved: 1). Both tables include search and pagination controls.

#	Center	Item Name	Category	Quantity On Hand	Reorder Threshold
1	The Children Assessment Processing Center (OSAEC)	cornbeef	FOOD	100	100
2	The Children Assessment Processing Center (OSAEC)	chicken	FOOD	30	100
3	The Children Assessment Processing Center (OSAEC)	bondpaper long	PAPER	8	100
4	The Children Assessment Processing Center (OSAEC)	Sardines	FOOD	50	100

Showing 1 to 4 of 4 entries

Prev 1 Next

Center	Status	Number of Requests
The Children Assessment Processing Center (OSAEC)	pending	1
The Children Assessment Processing Center (OSAEC)	approved	2
The PAG-ASA Youth Home Center (CICL)	approved	1

Showing 1 to 3 of 3 entries

Figure 34 CSWD Staff Dashboard 2

This panel features the important information of the centers. It displays graphs and tables related to the information of the center's inventory.

The screenshot shows the 'REGISTERED USERS' page. The sidebar menu is identical to Figure 34. The main content area displays a table of registered users with columns for #, Firstname, Lastname, Email, Center, Position, User type, status, and date registered. The table includes four entries: Hana Mimbita (CSDW WELFARE CENTER AUDITOR, cswd\_staff, Active), Krish Lorejo (DCWD II, center\_oic, Active), Ali Mimbita (SWO IV/ CICL CENTER HEAD, head, Active), and Mary Ann Bano (DCWII, center\_oic, Active). A 'Deactivate' button is shown next to each user entry. A 'Register User' button is located at the top right of the table area.

#	Firstname	Lastname	Email	Center	Position	User type	status	date registered
1	Hana	Mimbita	hanamim@gmail.com	CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE	CSWD WELFARE CENTER AUDITOR	cswd_staff	Active	2024-11-15 01:43
2	Krish	Lorejo	lorejokrish@gmail.com	The Children Assessment Processing Center (OSAEC)	DCWD II	center_oic	Active	2024-11-15 02:09
3	Ali	Mimbita	alimimbita@gmail.com	CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE	SWO IV/ CICL CENTER HEAD	head	Active	2024-11-15 02:56
4	Mary Ann	Bano	maryann@gmail.com	The PAG-ASA Youth Home Center (CICL)	DCWII	center_oic	Active	2024-11-15 02:57

Showing 1 to 4 of 6 entries

Prev 1 2 Next

Figure 35 CSWD Staff Registered User

This panel features the registered users of the system. The user will be able to see the account and its role in the system.



The screenshot shows the 'CENTERS' page of the CSWD Inventory Management System. The left sidebar has a dark blue background with white text and icons. The 'Centers' option is highlighted. The main area has a light blue header with the title 'CENTERS' and a back arrow. It includes a search bar, a 'Show' dropdown, and a 'Search:' input field. Below is a table with columns: #, Name, description, Address, and Actions. The table contains five entries:

#	Name	description	Address	Actions
1	CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE	The City Social Welfare and Development Office provides essential social services and support to enhance the well-being of vulnerable individuals and communities within the city.	Purok 4 - Saray, Iligan City, Philippines	<a href="#">Edit</a> <a href="#">Delete</a>
2	Happy Life Children's Home Center	Happy Life Children's Home Center serves as a residential treatment facility for girls who have been victims of sexual abuse or exploitation	Iligan City	<a href="#">Edit</a> <a href="#">Delete</a>
3	The Children Assessment Processing Center (OSAEC)	The Children Assessment Processing Center (OSAEC) protects women and children from abuse and trafficking through residential care.	Iligan City	<a href="#">Edit</a> <a href="#">Delete</a>
4	The Dangpanan sa Kabataan Day Center (DSKC)	The Dangpanan sa Kabataan Day Center (DSKC) offers educational and feeding programs for street and Bajau children.	Iligan City	<a href="#">Edit</a> <a href="#">Delete</a>
5	The PAG-ASA Youth Home Center (CICL)	The PAG-ASA Youth Home Center (CICL) provides safe space and rehabilitation for children in conflict with the law.	Iligan City	<a href="#">Edit</a> <a href="#">Delete</a>

Showing 1 to 5 of 5 entries

Figure 36 CSWD Staff Centers

This panel features the centers that are in the CSWD's record. The user will be able to add and edit a center. The user is also able to print and download the table of the centers.

The screenshot shows the 'SUPPLIERS' page of the CSWD Inventory Management System. The left sidebar has a dark blue background with white text and icons. The 'Suppliers' option is highlighted. The main area has a light blue header with the title 'SUPPLIERS' and a back arrow. It includes a search bar, a 'Show' dropdown, and a 'Search:' input field. Below is a table with columns: #, Supplier, Address, Contact #, TIN, date created, and Actions. The table contains two entries:

#	Supplier	Address	Contact #	TIN	date created	Actions
1	C And M ENTERPRISES	Fr. Burgos St, Iligan City, Lanao Del Norte	(063) 221 5580	293-745-621	2024-11-27 03:29	<a href="#">Edit</a> <a href="#">Delete</a>
2	JAPER FROZEN FOOD TRADING	Lambaguhon, San Roque, Iligan City	063 2253034	486-239-751	2024-11-27 03:29	<a href="#">Edit</a> <a href="#">Delete</a>

Showing 1 to 2 of 2 entries

Figure 37 Suppliers Page

This panel features the supplier's page. It holds important information about the supplier of the center.



The screenshot shows the 'INVENTORY' page of the CSWD Inventory Management System. On the left is a dark sidebar with navigation links: Dashboard, Accounts, Centers, Suppliers, **Inventory**, Purchased Requests, Purchased Orders, Analytics, Reports, and Logout. The main content area has a header 'INVENTORY' with a back arrow, a 'Welcome Back! Hana Mimbisa' message, and three buttons: '+ Withdrawal Form', 'Print', and 'Download'. Below is a 'Filter by Center:' dropdown menu with options like '-- Select Center --', 'CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE', 'Happy Life Children's Home Center', 'The PAG-ASA Youth Home Center (CICL)', and 'The Children Assessment Processing Center (OSAEC)'. A search bar and a date range selector ('Search: [ ]') are also present. The main table lists inventory items with columns: UOM, Quantity On Hand, Item Threshold, Image, Date Created, Last Update, and Status. The table shows four entries:

	UOM	Quantity On Hand	Item Threshold	Image	Date Created	Last Update	Status
1	FOOD	combeef	item_8488	kg	100	100	2024-12-11 14:37:46 2024-12-13 10:10:13 ✓
2	FOOD	chicken	item_7332	kg	30	100	2024-12-11 14:37:46 2024-12-11 14:37:46 !
3	PAPER	bondpaper long	item_5094	ream	8	100	2024-12-11 14:37:46 2024-12-11 14:37:46 !
4	FOOD	Sardines	item_8164	can	50	100	2024-12-13 10:08:58 2024-12-13 10:08:58 !

Showing 1 to 4 of 4 entries

Figure 38 CSWD Staff Inventory Page

This panel features the inventory page of the centers. The user will be able to select the center and view its inventory.

The screenshot shows the 'PURCHASE REQUESTS' page of the CSWD Inventory Management System. The sidebar is identical to Figure 38. The main content area has a header 'PURCHASE REQUESTS' with a back arrow, a 'Welcome Back! Hana Mimbisa' message, and a '+ Request Form' button. A dropdown menu 'Select a Center' is shown. Below are tabs for 'Pending', 'In Progress', 'Approved', and 'Rejected', with 'Pending' selected. A search bar and a date range selector ('Search: [ ]') are also present. The main table lists purchase requests with columns: #, PR Number, Requested By, Center, Requested Date, Status, Purchase Order Details, and Actions. The table shows one entry:

#	PR Number	Requested By	Center	Requested Date	Status	Purchase Order Details	Actions
1	CSWD-PR-2024-15-000004-001	Krish Lorejo - DCWD II	The Children Assessment Processing Center (OSAEC)	2024-12-15 17:53:59	<span>Pending</span>	No PO yet.	

Showing 1 to 1 of 1 entries

Figure 39 CSWD Staff Purchase Request Page



This panel features the Purchase Request Page. The user will be able to view and purchase requests made by the centers. They are also able to view the in progress, approved and rejected purchase requests.

The screenshot shows the 'Purchase Requests Details' page of the CSWD Inventory Management System. The left sidebar includes links for Dashboard, Accounts, Centers, Suppliers, Inventory, Purchased Requests, Purchased Orders, Analytics, Reports, and Logout. The main content area displays a purchase request for item #8488, combeef, requested by Krish Lorejo. It shows details like quantity on hand (100), required quantity (50), and total budget amount (₱3450). A table lists the item details. At the bottom, there are buttons for 'Send' and 'View Image'.

Figure 40 CSWD Staff Purchase Requests

This panel features the Purchase Request Page. The user will be able to view and purchase requests made by the centers. They are also able to view the in progress, approved and rejected purchase requests.

The screenshot shows the 'Purchase Requests' page of the CSWD Inventory Management System. The left sidebar includes links for Dashboard, Accounts, Centers, Suppliers, Inventory, Purchased Requests, Purchased Orders, Analytics, Reports, and Logout. The main content area displays four purchase requests listed in a table. The first request is pending, while the others are approved. Each row shows details like PR Number, Requested By, Center, Requested Date, Status, Purchase Order Details, and Actions (View Details, Generate PO).

Figure 41 CSWD Staff Purchase Requests



This panel features the purchase orders page that are approved. It displays important information such as who requested the order and which center it belongs to.

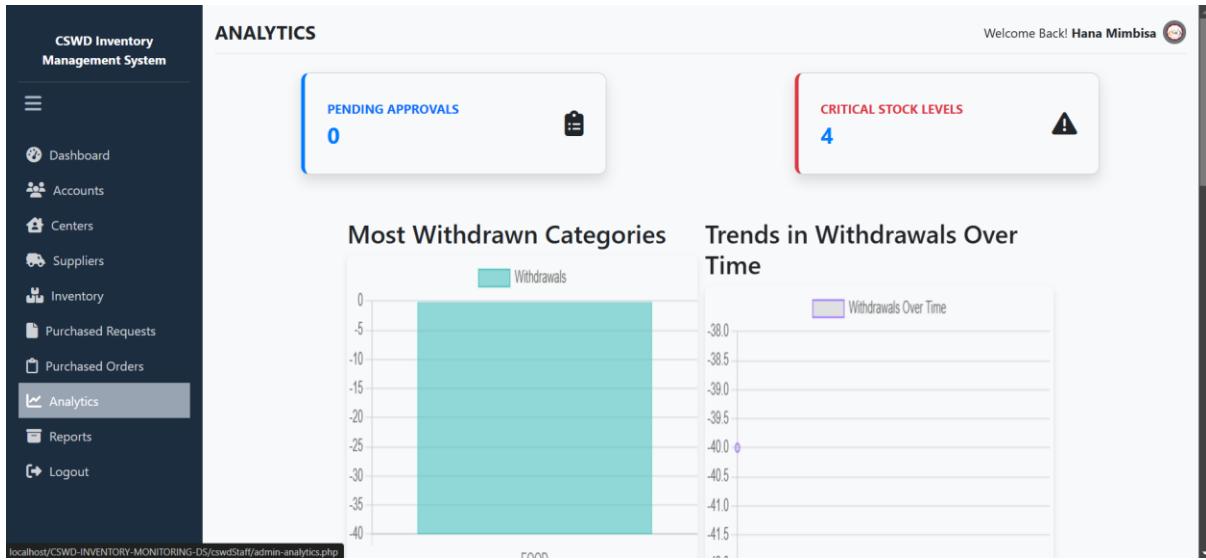


Figure 42 CSWD Staff Analytics

This panel features the Analytics Panel. It displays graphs about related information on the system.

The screenshot shows the 'Edit Profile Settings' page. The sidebar menu includes Options, Dashboard, Accounts, Centers, Suppliers, Inventory, Purchased Requests, Purchased Orders, Analytics, Reports, Settings (which is selected), and Logout. The main content area has a header 'EDIT PROFILE SETTINGS' and a 'Welcome Back! Hana Mimbisa'. It features a form titled 'Edit Profile' with fields for City Social Welfare and Development Office (CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE), Name (hana, mimbisa), Email (hanamim@gmail.com), Phone (09876543219), and a placeholder for Username (hanamim). It also includes fields for Current Password and New password, and a 'Save' button.

Figure 43 CSWD Staff Reports



This panel features the edit profile form. This enables the user to have the ability to edit their profile account in the system.

For CSWD Head Panel, it has the same functions with the CSWD Staff however there are few restrictions, the CSWD Head edit or delete any submitted forms submitted by the welfare centers, he or she can only view and monitor the day-to-day operations within the system.

### Software Quality Result based on ISO 25010 quality standards

**Table 17**  
*Functional Suitability assessment level*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Functional Suitability	Functional Completeness: The function of the system covers all the specified task and user objectives.	4.80		
	Functional Correctness: The function of the system provides the correct results with the needed degree of precision.	4.73	4.71	Extremely Functional
	Functional Appropriateness: The function of the system facilitates the accomplishment of specified tasks and objectives.	4.60		

This table indicates that the average score regarding Functional Suitability is 4.71, which falls under the Extremely Functional. This means that the system has



met functional requirements and expectations of users. The results show that the system is well-designed to enable the tasks and workflows of CSWD to provide reliable and accurate functionalities.

**Table 18**  
*Performance Efficiency*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Performance Efficiency	Time Behavior: Degree to which the response and processing times and throughput rates of a system, when performing its functions, meet requirement	4.67		
	Resource Utilization: Degree to which the amounts and types of resources used by a system, when performing its functions, meets requirement	4.73	4.70	Extremely Efficient
	Capacity: Degree to which the maximum limits office product or system parameters meet requirements.	4.67		

This table has a mean value of 4.70, which is Extremely Efficient in terms of Performance Efficiency. This implies that the system is very efficient in terms of delivering superior performance with respect to quick response times and effective resource management, even under demanding operational conditions. The results confirm that the system can handle workloads typical of CSWD



operations.

**Table 19**  
*Compatibility*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Compatibility	Co-existence: The system integrates well with different browsers	4.93	4.60	Extremely Compatible
	Interoperability: The system supports multiple device platforms	4.80		

This table achieved the average score of 4.60, which further groups it under Extremely Compatible. This rating emphasizes how extremely superior the system's level of interoperability and current compatibility with tools, platforms, and workflows are because it allows smooth integration with other applications adopted by the CSWD workforce.



**Table 20**  
*Interaction Capability*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Interaction Capability	Appropriate Recognizability: The user interface allows seamless interaction with minimal effort.	4.53		
	Learnability: The system provides clear and timely feedback for user actions.	4.47	4.60	<i>Extremely Capable</i>
	Operability: The interface design supports multitasking or concurrent user activities.	4.73		
	Inclusivity: The system adapts interaction modes based on user needs.	4.60		

This table scored the result with a mean value 4.60 which means it is Extremely Capable with an extreme score means: it allows its users to engage intuitively, intuitively easy while not forcing its users into accomplishing any of the business activities, thereby it delivers good quality on usability which satisfies technical as well as a nontechnical user toward the ease of doing those business activities in smooth operation.



**Table 21**

*Reliability*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Reliability	Faultlessness: The system operates without interruptions during normal use.	4.60		
	Availability: The system quickly recovers from unexpected failures or crashes.	3.81	4.35	Extremely Reliable
	Fault Tolerance: The system uptime meets the agreed service level agreements.	4.53		
	Recoverability: System data integrity is preserved during operational disruptions or recovery processes	4.47		

This table has a mean score of 4.35 for Reliability indicates that the system is Extremely Reliable and offers reliable service with virtually no disruption and not any downtime. This score illustrates that the system does perform intended functions without interrupting them at any instance, even in critical cases over time.



**Table 22**  
*Security*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Security	Confidentiality: The system ensures data confidentiality by protecting sensitive user data.	4.67		
	Integrity: The system implements robust user authentication mechanisms.	4.67	4.60	<i>Extremely Secure</i>
	Non-repudiation: The system is protected against known vulnerabilities	4.87		
	Resistance: The system provides clear access control mechanisms for different user roles.	4.80		

This table achieved a mean score of 4.60, meaning it is Extremely Secure of security in the protection of sensitive information. This measure indicates a system that provides data protection against unauthorized access, security breaches or even such events, hence securing CSWD to safeguard their secrecy.



**Table 23**  
*Maintainability*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Maintainability	Modularity: The system's codebase is modular and easy to update or extend.	4.60		
	Reusability: The system includes clear and comprehensive documentation for developers.	4.67		<i>Extremely Maintainable</i>
	Modifiability: The system uses standard and widely accepted technologies or frameworks.	4.47		
	Modularity: The system's codebase is modular and easy to update or extend.	4.60		

This table achieved a mean score of 4.60, meaning it is Extremely Maintainable of security in the protection of sensitive information. This measure indicates a system that provides data protection against unauthorized access, security breaches or even such events, hence securing CSWD to safeguard their secrecy and integrity.



**Table 24**  
*Flexibility*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent
Flexibility	Adaptability: The system supports adding new features or functionalities without significant rework.	4.67		
	Replaceability: The system adapts to changes in business requirements or user needs effectively.	4.60	4.73	<i>Extremely Flexible</i>
	Scalability: The system can scale to accommodate a growing number of users or data volume.	4.80		
	Installability: The system supports integration with new external tools or platforms.	4.87		

This table was rated on average 4.73, representing Extremely Flexible. This is the degree in which a system is adapted to changing conditions and varied user requirements or configurations suitable for such a dynamic workplace as CSWD.

**Table 25**  
*Safety*

Variable	Indicators	Assessment Level		
		Mean	Overall Rating	Descriptive Equivalent



Safety	Operational Constraint: Degree to which a product or system constrains its operation to within safe parameters or states when encountering operational hazard.	4.73	
	Risk Identification: Degree to which a product or system provides warnings of unacceptable risks to operations or internal controls so that they can react in sufficient time to sustain safe operations.	4.67	4.70 <i>Extremely Safe</i>
	Safe Integration: Degree to which a product can maintain safety during and after integration with one or more components.	4.73	

This table achieved a mean score of 4.70, which is classified as Extremely Safe. This points out the ability of the system to minimize risk, prevent errors, and ensure safe operation. The high score reflects that users have confidence in the reliability of the system during critical operations.

**Table 26**

*Software Quality Level of the Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support*

Variable	Mean	Descriptive Equivalent
Functional Suitability	4.71	<i>Extremely Functional</i>
Performance Efficiency	4.70	<i>Extremely Efficient</i>
Compatibility	4.90	<i>Extremely Compatible</i>



Interaction Capability	4.60	<i>Extremely Capable</i>
Reliability	4.35	<i>Extremely Reliable</i>
Security	4.60	<i>Extremely Secure</i>
Maintainability	4.60	<i>Extremely Maintainable</i>
Flexibility	4.73	<i>Extremely Flexible</i>
Safety	4.70	<i>Extremely Safe</i>
<b>Aggregate Mean</b>	<b>4.65</b>	<b><i>Extreme Quality</i></b>

The results presented in Table 16, which summarize the software quality level of the *Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support*, reflect its evaluation using the ISO/IEC 25010 software quality model. Respondents' evaluations provided the basis for scoring, with the computed mean for each characteristic assessed against descriptive ratings to determine both individual quality levels and the aggregate mean (4.65).

The system, with all the characteristics constantly at high ratings, from functional suitability (4.71) to safety (4.70), shows excellent performance. Such ratings confirm that not only is the system well-built but it also distinguishes itself with efficiency, reliability, security, and a user-centric design. The following findings depict continuous improvement and compliance with the RAD methodology and iterative testing process toward the ISO 25010 standards. A user-centered, iterative approach was crucial toward delivering a strong, quality



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solution specific to the requirement of the Iligan City Social Welfare and Development Office.



## Chapter 5

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the study, its significant findings, conclusions, and recommendations for future improvements for the Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support.

#### Summary Findings

1. The researchers successfully designed and implemented a centralized inventory management and monitoring system with decision support that is specific to the Iligan City Social Welfare and Development Office. Through the system, real-time monitoring of supplies and actual inventory levels is possible.
2. The developed system accurately tracks the state of the inventory, enabling users to view item statuses, quantities, and activity logs. This accuracy reduces errors associated with manual tracking processes and provides reliable data for decision-making.
3. Through iterative testing and evaluation, it was shown that the system did indeed use decision support features to its advantage. This capability enables users to make decisions on restocking and purchasing inventory in a manner that improves operational efficiency and minimizes resources wasted.



4. The system is designed with emphasis on ISO/IEC 25010 software quality standards. It achieves an "Extreme Quality" rating for all of its critical characteristics, which are usability, performance efficiency, security, and maintainability. Thus, the system is strong, friendly, and scalable for future requirements.
5. The web-based integration improves accessibility since authorized users can access inventory details and functionalities remotely.

## Conclusions

1. The Iligan City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support meets the study's goals effectively. It streamlines the process of tracking inventory, enhances accuracy, and reduces manual intervention effort.
2. The decision support capabilities added significantly improve the process of inventory management. The users can plan the restocking schedule and avoid situations such as stock outs or overstocking.
3. Another positive assurance of ISO 25010 quality standards is the reliability and the efficiency in which this system could be made available as the operating needs of the CSWD.
4. By leveraging modern web technologies, the system provides accessibility, flexibility, and scalability, this makes it a practical solution for inventory management in dynamic environments.

Technology has made it easier to keep track of our inventory. The Iligan



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City Social Welfare and Development Office Inventory Management and Monitoring System with Decision Support is a web-based system that makes keeping track of your inventory easier. The user can request items and also view its stocks from their inventory.

### **Recommendations**

The following recommendations are made to further enhance the system

1. Incorporate advanced analytics to further enhance the decision support abilities by incorporating predictive analytics and demand forecasting. It could forecast future inventory needs by learning about historical usage trends and patterns.
2. Enable real-time notifications of low inventory levels or expired items to improve proactive inventory management.
3. Implement multi-factor authentication (MFA) to make the process of authenticating the users stronger. The system will be checked frequently for security, and that will keep it safe from future threats.
4. Scalability for future adoption This could potentially be scaled to other areas in the city government through usage in other departments and offices. It would achieve uniformity in inventory handling practices in the units involved.



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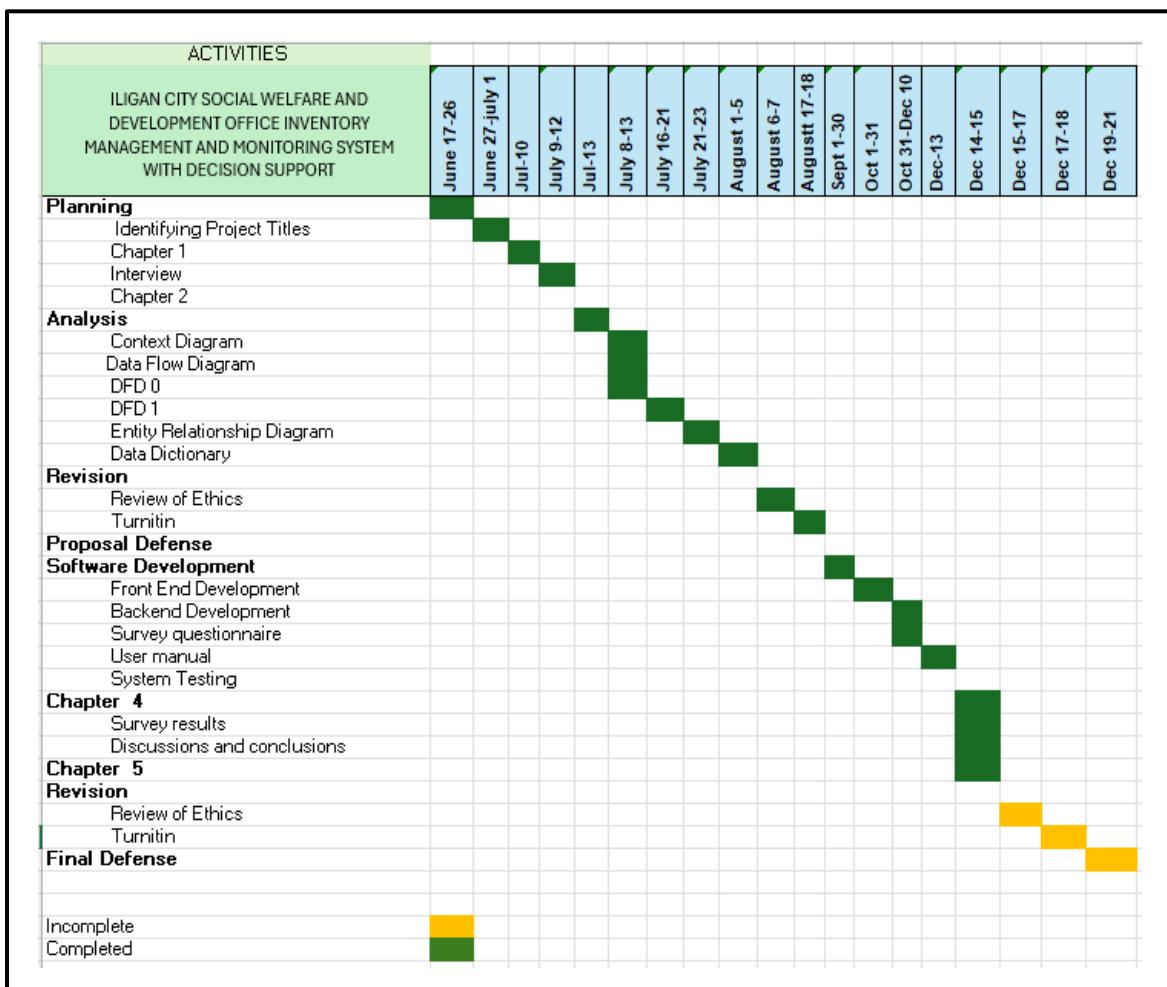
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## **APPENDIX A: Gantt Chart**





## APPENDIX B: Permission Letter to Conduct Interview



St. Michael's College  
College of Computer Studies  
Quezon Ave., Iligan City, Philippines, 9200



July 9, 2024

EVELYN S. MADRIO

OIC Head

The Iligan City of Social Welfare and Development Office  
Saray, Iligan City, Philippines, 9200

Dear Ma'am Madrio,

Praise be Jesus and Mary!

We, the 4th year students of St. Michael's College, under the College of Computer Studies, are currently undertaking a study entitled "**DonatePlus: A Donation Platform for Iligan City Social Welfare and Development Office**" in partial fulfillment of our Bachelor of Science in Information Technology course. This study aims to develop a donation platform to further streamline the process of receiving donations using web technology.

In line with this, we would like to ask permission from your good office to allow us to conduct an interview to gather relevant information needed for the completion of our study. In addition, we would like to inform you that this study employs the Rapid Application Development (RAD) approach, which requires the participation of people from your good office to test the prototype. Furthermore, after testing, we will administer a survey on the usability of the developed software.

At the completion of this study, we assure you that the Iligan City Social Welfare and Development Office will be fully acknowledged, and this scholarly work will be considered a research collaboration.

Your consideration of this humble request will be highly appreciated. Rest assured that all information that will be gathered will be treated with strict confidentiality. Should you have further concerns and clarifications, please let us know through our emails and contact numbers.

Respectfully yours,

NOR JANAH B. MIMBISA

Researcher

*[Signature]*  
norjanahbuddayan.mimbisa@my.smciligan.edu.ph  
0955 960 8408

JAMES ANGELO B. ANADON

Researcher

*[Signature]*  
jamesangelobalaba.anadon@my.smciligan.edu.ph  
0955 264 0892

Noted by:

JEROME O. ABILAY, MSIT  
Research Adviser

  
EDSEL P. BABO-MONTEROLA, Ph.D.  
Dean, College of Computer Studies  
St. Michael's College, Iligan City



## APPENDIX C: Permission Letter to use relevant information about CSWD Office



St. Michael's College  
College of Computer Studies  
Quezon Ave., Iligan City, Philippines, 9200



July 31, 2024

EVELYN S. MADRIO  
CSWD HEAD  
Iligan City of Social Welfare and Development Office  
Saray, Iligan City, Philippines, 9200

Dear Ma'am Madrio,

Praise be Jesus and Mary!

We, the 4th year students of St. Michael's College, under the College of Computer Studies, are currently undertaking a study entitled "**DonatePlus: A Donation Platform for Iligan City Social Welfare and Development Office**" in partial fulfillment of our Bachelor of Science in Information Technology course. This study aims to develop a donation platform to further streamline the process of receiving donations and providing social assistance using web technology.

In line with this, we would like to ask permission from your esteemed office to allow us to use relevant information about the CSWD Office, such as its vision and mission, and events posted on your Facebook page, among other details. We assure you that our study will not include any confidential information such as personal data and internal files. In addition, we would like to inform you that this study employs the Rapid Application Development (RAD) approach, which requires the participation of people from your good office to test the prototype. Furthermore, after testing, we will administer a survey on the usability of the developed software.

At the completion of this study, we assure you that the Iligan City Social Welfare and Development Office will be fully acknowledged, and this scholarly work will be considered a research collaboration.

Your consideration of this humble request will be highly appreciated. Rest assured that all information that will be gathered will be treated with strict confidentiality. Should you have further concerns and clarifications, please let us know through our emails and contact numbers.

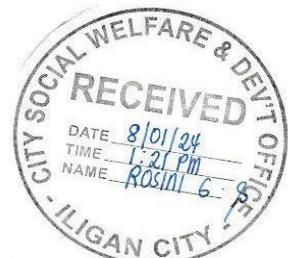
Respectfully yours,

**NOR JANAH B. MIMBISA**  
Researcher  
norjanahbudlayan.mimbisa@my.smciligan.edu.ph  
0955 960 8408

**JAMES ANGELO B. ANADON**  
Researcher  
jamesangelobalaba.anadon@my.smciligan.edu.ph  
0955 264 0892

Noted by:

**JEROME O. ABILAY, MSIT**  
Research Adviser  
  
**EDSEL P. BABAA-MONTEROLA, Ph.D.**  
Dean, College of Computer Studies  
St. Michael's College, Iligan City





## APPENDIX D: ISO 25010 Questionnaire



St. Michael's College  
College of Computer Studies  
Quezon Ave., Iligan City, Philippines, 9200



Date: \_\_\_\_\_

Dear Respondents,

We are researchers from Saint Michael's College of Iligan City, under the Department of College of Computer Studies, with a program of Bachelor of Science in Information Technology. In line with this, we would like to conduct a survey for the inventory management and monitoring system with a decision support system for the Social Welfare and Development office of the city of Iligan as part of the Rapid Application Development (RAD) approach.

In this regard, we kindly seek your cooperation in completing this survey. Your participation will help us assess the quality and acceptability of the application, to meet your needs as our target user/partner. Your valuable feedback will guide us in further improving the system's features to serve you better.

Please rest assured that all information gathered through this survey will be treated with the utmost confidentiality in compliance with Republic Act 10173, also known as the Data Privacy Act of 2012.

Thank you very much for your time and partnership in this endeavor.

### Survey Questionnaire

Please rate the level of your agreement to the statement that describes the quality of the system/application.

Encircle the number that best represents your honest answer using the scale below.

5- Extremely Agrees

4- Moderately Agree

3- Somewhat Agree

2- Slightly Agree

1- Disagree

**Functional Suitability** - represents the degree to which a system provides functions that meet the stated and implied needs when used under specified conditions.



Software Product Quality	Statements	Level of Agreement				
Functional Suitability	Functional Completeness: The function of the system covers all the specified task and user objectives.	5	4	3	2	1
	Functional Correctness: The function of the system provides the correct results with the needed degree of precision.	5	4	3	2	1
	Functional Appropriateness: The function of the system facilitates the accomplishment of specified tasks and objectives.	5	4	3	2	1

**Performance Efficiency** - represents the performance relative to the amount of resources used under stated conditions.

Software Product Quality	Statements	Level of Agreement				
Performance Efficiency	Time Behavior: Degree to which the response and processing times and throughput rates of a system, when performing its functions, meet requirement	5	4	3	2	1
	Resource Utilization: Degree to which the amounts and types of resources used by a system, when performing its functions, meets requirement	5	4	3	2	1
	Capacity: Degree to which the maximum limits office product or system parameters meet requirements.	5	4	3	2	1

**Compatibility** - The degree to which a system can exchange information with other systems or operate in different environments, such as multiple devices, browsers, or platforms, without issues.



Software Product Quality	Statements	Level of Agreement				
Compatibility	Co-existence: The system integrates well with different browsers	5	4	3	2	1
	Interoperability: The system supports multiple device platforms	5	4	3	2	1

**Interaction Capability** - Represents the extent to which the system enables seamless, intuitive, and effective interaction between the user and the system, facilitating task completion and user engagement.

Software Product Quality	Statements	Level of Agreement				
Interaction Capability	Appropriate Recognizability: The user interface allows seamless interaction with minimal effort.	5	4	3	2	1
	Learnability: The system provides clear and timely feedback for user actions.	5	4	3	2	1
	Operability: The interface design supports multitasking or concurrent user activities.	5	4	3	2	1
	Inclusivity: The system adapts interaction modes based on user needs.	5	4	3	2	1

**Reliability** - The ability of a system to perform its required functions under stated conditions for a specified period, ensuring continuity of operations and data integrity during normal use and unexpected events.

Software Product Quality	Statements	Level of Agreement				



Reliability	Fault lessness: The system operates without interruptions during normal use.	5	4	3	2	1
	Availability: The system quickly recovers from unexpected failures or crashes.	5	4	3	2	1
	Fault Tolerance: The system uptime meets the agreed service level agreements.	5	4	3	2	1
	Recoverability: System data integrity is preserved during operational disruptions or recovery processes.	5	4	3	2	1

**Security** - The degree to which a system protects its data and resources against unauthorized access, vulnerabilities, and threats while ensuring confidentiality, integrity, and availability.

Software Product Quality	Statements	Level of Agreement				
Security	Confidentiality: The system ensures data confidentiality by protecting sensitive user data.	5	4	3	2	1
	Integrity: The system implements robust user authentication mechanisms.	5	4	3	2	1
	Non-repudiation: The system is protected against known vulnerabilities	5	4	3	2	1
	Resistance: The system provides clear access control mechanisms for different user roles.	5	4	3	2	1

**Maintainability** - The ease with which a system can be modified to correct faults, improve performance, or adapt to a changing environment or requirements.

Software Product Quality	Statements	Level of Agreement				



Maintainability	Modularity: The system's codebase is modular and easy to update or extend.	5	4	3	2	1
	Reusability: The system includes clear and comprehensive documentation for developers.	5	4	3	2	1
	Modifiability: The system uses standard and widely accepted technologies or frameworks.	5	4	3	2	1
	Testability: Developers can easily deploy and test changes without disrupting the live environment.	5	4	3	2	1

**Flexibility** - The ability of a system to adapt or be modified to accommodate new or changing user requirements, technologies, or environments without significant rework or degradation of functionality.

Software Product Quality	Statements	Level of Agreement				
Flexibility	Adaptability: The system supports adding new features or functionalities without significant rework.	5	4	3	2	1
	Replaceability: The system adapts to changes in business requirements or user needs effectively.	5	4	3	2	1
	Scalability: The system can scale to accommodate a growing number of users or data volume.	5	4	3	2	1
	Installability: The system supports integration with new external tools or platforms.	5	4	3	2	1
	Configurability: The system allows for customization to fit specific user requirements.	5	4	3	2	1

**Safety** - the degree to which a product under defined conditions avoids a state in which human life, health, property, or the environment is endangered.



Software Product Quality	Statements	Level of Agreement				
Safety	Operational Constraint: Degree to which a product or system constrains its operation to within safe parameters or states when encountering operational hazard.	5	4	3	2	1
	Risk Identification: Degree to which a product or system provides warnings of unacceptable risks to operations or internal controls so that they can react in sufficient time to sustain safe operations.	5	4	3	2	1
	Safe Integration: Degree to which a product can maintain safety during and after integration with one or more components.	5	4	3	2	1

**FEEDBACK AND SUGGESTIONS:**

Please provide further comments about your experience in using our system. Kindly identify its **STRONG** point/s to be enhanced and **WEAK** points that need to be addressed from improvements.

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Do you have any thoughts on other Features/Functions that can be added to our system? Kindly share any suggestions with us so we can better improve it.

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Respondent's Name: \_\_\_\_\_

Date of Evaluation: \_\_\_\_\_

***Confidentiality Clause***

This is to acknowledge the right of each respondent to privacy; thus the researcher pledges to keep all collected data with utmost confidentiality.

**Researcher/s:**

NOR JANAH B. MIMBISA

Name of Participant

Signature

\_\_\_\_\_ Date

JAMES ANGELO B. ANADON

Name of Participant

Signature

\_\_\_\_\_ Date



## APPENDIX E: Certificate of Data Gathering Procedure



9200 Iligan City, Philippines

Tel. Nos. (063) 221-2810 (Pres. Office) (063) 221-3812 (Registrar) (063) 223-8318 (MITEC/Alumni)  
Fax No.: (063) 223-8109 (063) 221-0111 (Research) (063) 225-3610 (HRM Lab) (063) 221-7134  
(BED – Tibanga) Telefax: (063) 221-5325  
Website: <http://www.smcligan.edu.ph> e-Mail: [info@smcligan.edu.ph](mailto:info@smcligan.edu.ph)

## Certification

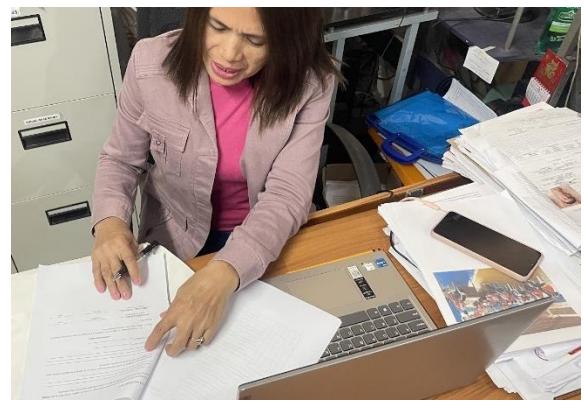
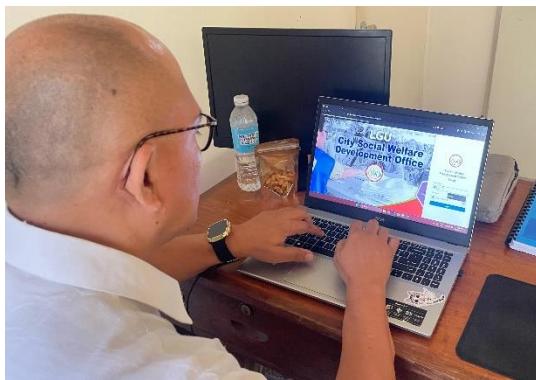
This is to certify that the data gathering phase of the research conducted by Nor Janah B. Mim bisa and James Angelo B. Anadon entitled "ILIGAN CITY SOCIAL WELFARE AND DEVELOPMENT OFFICE INVENTORY MANAGEMENT AND MONITORING SYSTEM WITH DECISION SUPPORT" took place at the Iligan City of Social Welfare and Development Office, located in Saray, Iligan City, Philippines, 9200 on December 13 & 16, 2024.

This certification is issued upon the request of the researcher to authenticate the data gathering conducted at the Iligan City Social Welfare and Development Office under my approval and supervision. Given this 16th day of December 2024.

EVELYN S. MADRIO  
Government Department Head II  
Head of Office



## APPENDIX F: User Testing





## Curriculum Vitae

**Mimbisa, Nor Janah B.**

Tubod, Iligan City

Mobile #: 09559608408

Email Address:

norjanahbudlayan.mimbisa@my.smciligan.edu.ph



### PERSONAL INFORMATION

Date of Birth:	November 6, 2002
Age:	22
Sex:	Female
Civil Status:	Single
Height:	5'2 ft
Weight:	40kg
Citizenship:	Filipino
Religion:	Islam
Language:	Filipino, Maranao, English, Cebuano
Father's Name:	Engr. Ali M. Mimbisa Jr.
Mother's Name:	Roselah B. Mimbisa

### EDUCATIONAL BACKGROUND

#### Tertiary

Bachelor of Science in Information Technology  
St. Michael's College of Iligan, Inc.  
Quezon Avenue, Iligan City  
S.Y. 2022-Present

#### Senior High

Iligan City National High School  
Gen. Wood Street, Roxas Ave., Brgy.



Mahayahay, Iligan City,  
S.Y. 2019 – 2021

**Secondary**

Iligan City National High School  
Gen. Wood Street, Roxas Ave., Brgy.  
Mahayahay, Iligan City  
S.Y. 2015 – 2019

**Elementary**

Tubod Elementary School  
Purok Mangga, Tubod, Iligan City  
S.Y. 2006 – 2015

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**SPECIAL SKILLS**

- Proficient knowledge in Programming Languages (JavaScript, HTML, PHP, Python)
- Basic knowledge in website developing using WordPress
- Basic knowledge in networking
- Basic knowledge in react mobile app development

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**TRAININGS & SEMINARS**

- Google DevFest 2024 (Google Developer Group CDO) – Nov 16, 2024
- Adobe Illustrator Essentials - Sept 23, 2024
- DICT Region 10 Python programming essentials course Webinar
- Visual Graphic Design NC III – August – October 2021
- Student Leadership Training - October 2023
- my.ComApps - A technology development – April 2024



## Curriculum Vitae

**Anadon, James Angelo B.**

Bayview, Dalipuga, Iligan City

Mobile #: 09552640892

Email Address:

jamesangelobalaba.anadon@my.smciligan.edu.ph



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### PERSONAL INFORMATION

Date of Birth:	August 12, 2002
Age:	22
Sex:	Male
Civil Status:	Single
Height:	5'5 ft
Weight:	42kg
Citizenship:	Filipino
Religion:	Roman Catholic
Language:	Filipino, English, Cebuano
Father's Name:	Jaime P. Anadon
Mother's Name:	Rebecca B. Anadon

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### EDUCATIONAL BACKGROUND

#### Tertiary

Bachelor of Science in Information Technology  
St. Michael's College of Iligan, Inc.  
Quezon Avenue, Iligan City  
S.Y. 2022-Present

#### Senior High

Dalipuga National High School  
Bayview, Dalipuga, Iligan City



---

S.Y. 2019 – 2021

**Secondary**

Dalipuga National High School

Bayview, Dalipuga, Iligan City

S.Y. 2015 – 2019

**Elementary**

Tubod Elementary School

Purok Mangga, Tubod, Iligan City

S.Y. 2006 – 2015

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