

# ANALYSIS AND DESIGN OF A SALES AND INVENTORY MANAGEMENT INFORMATION SYSTEM FOR A MOTORCYCLE PARTS AND ACCESSORIES STORE

Charlene Anne Magallanes<sup>1</sup>, Mary Nelva Ortiz<sup>2</sup>, Mariah Nicole Seville<sup>3</sup>, Shinji Luke Glidden Tejada<sup>4</sup>, Ericka Mae Tuliao<sup>5</sup>, Nikko Gerald Eroy<sup>6</sup>, Mark Van M. Buladaco<sup>7</sup>

1(BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: charlenem.cha@gmail.com)

2(BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: marynelvadagpinortiz@gmail.com)

3(BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: sevilnikki@gmail.com)

4(BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: zienriddle@gmail.com)

5(BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: erickamaetuliao@gmail.com)

6(Department Head, BS in Information System, Mindanao Kokusai Daigaku, Davao City, Email: nikkogerald.eroy@gmail.com)

5(Dean, Institute of Computing, Davao del Norte State College, Panabo City, Email: markvan.buladaco@dnsc.edu.ph)

\*\*\*\*\*

## Abstract:

One of the safest waysto monitor products and stocks that is need of the company is the inventory management system. The inventory management system is important to ensure quality control in the business that handles transactions revolving around customer goods. The LJJG motor parts and accessories were having trouble handling the stocks and products. They only have manual processing of records which turns to tedious work, and had a tendency that they will record it wrong. The main objective of this paper is to design an information system that will monitor their products and stocks with notification of restocking level. Design an information system that will record, compute and produce accurate sales and support. Design an information system that will generate sales and inventory reports from the organization and provide process models and data models for the sales and inventory process of the proposed information system. In system methodology, we use the agile method to manage a project by breaking it up into several phases. In this result, we use a system flowchart, use case diagram, context data flow diagram, entity relationship diagram, and data dictionary. Inventory Management System makes it simple to locate and analyze inventory information in real-time with a simple database search. There's a lot that goes into your inventory management, and it has a big impact on your business's bottom line. Using an inventory management software solution reduces errors in your inventory management, which makes your business more efficient, more profitable, and better equipped to serve your customers. This paper can contribute to the LJJG motor parts and accessories store to have an idea of what they will need to enhance their business, and to other companies that have not yet an inventory system, this paper can give you an idea of having an inventory management system.

**Keywords** —system analysis, system design, inventory management, sales monitoring, Philippines

\*\*\*\*\*

## **I. INTRODUCTION**

Inventory control may be a system that deals with the combination of information, logistics, purchasing, inspection, material handling, and reposition, packaging, management of suppliers, and infrequently security of inventory [1]. Discovering and maintaining optimum levels of investment all told sorts of inventories and increasing the flow of products, data, and different connected resources like human resources and energy from the purpose of origin to the ultimate point of consumption is that the main objective of managing inventories [2]. Inventory management and designing aim to see the essential parts of offer Chain Management and putting these parts into action. Inventory management is that the backbone of each retail company; it's a method of making certain that an organization perpetually has the product it wants accessible, which keeps prices as low as potential.

A point of sale inventory management system permits a business owner to own quite one business location and adequately keep track of inventory at every while not being a gift. Not a lot of worries concerning worker thieving or evaluation inconsistency between one location and another. The boss is away and not worry concerning worker thieving. Worker potency is maintained. The purpose of sale systems takes care of these issues that result once management does not gift. They noted that manual sales systems square measure long, it's terribly tedious, variant work, slow processing, it's not an easy surrounding and it's tough to found records due file management system [3]. At an early age, once most of the businesses square measure still victimization the manual system within the sales and inventory, most of the businesses encountered such a large amount of issues, and this is often as a result of the method of the prevailing system is simply too slow and too long.

The manual inventory management system will facilitate sales and production managers management prices by characteristic lost sales thanks to inventory shortages; inventory overrides on products that aren't selling; losses thanks to worker thieving or injury. Implementing a listing management system will take an oversized quantity of your time looking at the scale and variety of inventory. On the far side, it being long, inventory counts, and incorrect sales figures is prejudices to your business.

To overcome the deficiencies of manual systems, several firms have machine-driven their inventory system. This technique is employed to trace or monitor the merchandise and product of an outlet. With an automatic Sales and Inventory System, businesses deem computers to try tasks that were once performed manually, like inventory checks and product sales. Machine-driven Sales and Inventory System these processes are handled in an exceedingly timely manner and even be a lot of correct and reliable than ever before [4]. It provides bigger accuracy and a lot of flexibility within the sorts of info and reports which will be generated by the system. Location systems have replaced ancient money registers, mostly for practical reasons.

Inventory Management is outlined as a framework used in companies to dominant their interest in inventory. It includes the recording and observant of stock level, estimating future requests, and selecting once and the way to rearrange [5]. On the opposite hand, inventory management could be a technique that corporations use to arrange, store, and replace inventory, to stay AN adequate provider of products at an equivalent time minimizing price [6]. Inventory management affects the competitive advantage of producing companies. An equivalent study any concludes that the firm is in a position to vie supported quality and delivery of client orders on time [7]. Competitive advantage includes capabilities that permit a corporation to differentiate itself from its

competitors as an outcome of important management selections [8]. The inventory investment for a tiny low business takes up a giant proportion of the full budget. Nevertheless, internal control is one of every of the foremost neglected management areas in tiny companies. Several tiny companies have an excessive quantity of money affianced to the accumulation of inventory sitting for an extended amount as a result of the slack inventory management or inability to manage the inventory with efficiency. Poor inventory management interprets directly into strains on a company's income.

This inventory system management can help the business of LJJG motorcycle parts and accessories, especially in managing their products and stocks. As we can see also that LJJG motorcycle parts and accessories have no system of inventory, and the tendency of it is their business will no longer reach their sales because they did not monitor their stocks and eventually the employee has the freedom to steal it because they did not monitor their products and stocks. Also, the owner of this business will know if they already out of their capital or not. By this inventory system, it will track how their business's supply chain.

#### *The objective of the study*

The main objective of this paper is to propose an inventory system and design for LJJG motor parts to improve their business process. These are the specific objectives of the study:

1. Design an information system that will monitor their products and stocks with notification of restocking level.
2. Design an information system that will record, compute and produce accurate sales and support.
3. Design an information system that will generate sales and inventory reports from the organization.
4. Provide process models and data models for the sales and inventory process of the proposed information system.

#### *Significance of the Study*

This study will be helpful and beneficial to the following entities:

LJJG Motorcycle Parts and Accessories - The proposed inventory system will big help to this company. They will no longer sacrifice their manual records, and it will surely monitor their products and no more employee theft.

Manager- No more hassle to check their sales and products. All he/she needs is to log in to the system and check for it.

Customer- they will be given good quality service.

Staff- no more manual records. It will be more convenient and less hassle. There will be no problem in recording since it's all computerized and no hassle for updating their stocks.

Owner- the owner will also benefit the system because he/she can manage the system in which everything is provided there. All he/she needs is to access the system, and they will the records.

Future developers- this research paper will be a help to them as a reference and a guide to them if ever they have a research paper about in inventory system.

#### *Scope and Limitations*

The proposed system and design will give the company easy access to find all their records and will provide a database that contains all the sales and inventory transactions. This system has the ability to establish automatic product restocking. The system can do product entry that comes from the specific supplier and choose the product delivered and its quantity. The system will also be able to provide report generation, which includes the daily, weekly, monthly, and annual reports of sales. The proposed system can access only offline, and it is accessible only for LJJG motorcycle parts and accessories.

Due to the technical nature of the software and technology used in an inventory system, it can be difficult to thoroughly educate all members of staff on how to use the inventory

system in an effective way. In addition, the education process can take days or even weeks, meaning that business can come to a standstill during this time. As a result, although inventory systems can be incredibly useful, they can also be difficult to implement.

## II. METHODOLOGY

In this study, the method is one of the most important to understand and analyze the process and to show the different tools that the researchers used.

### *Existing Business Process*

Sales and Inventory Management System is relevant to LJJG Motor Shop as the store that offers an automotive facility where you can have auto maintenance and auto repairs. In fact, LJJG Motor Shop is the oldest motor shop in the area of Agdao for almost nine years of operation, and they also had another store branch to gather growing customers. However, until now, they do not use any computerized system to help them with sales and inventory control. That explains the need for having a systematic inventory control system.

### *Agile Methodology*

The system development method proposed to be used in this project is Agile Methodology. Due to its potential to move rapidly and simply in terms of software development. The proposed system that will use is Agile Methodology. Agile would imply a flexible approach that responds rapidly to changes, and this is accurate, allowing a developer to go back to a previous stage and make essential adjustments, thereby refining the software without much delay [12].

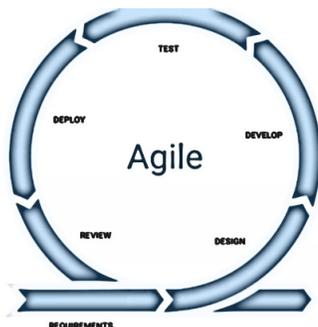


Fig 1. Agile Methodology. Source: InfoWorld (Isaac Sacolick, 2020)

### Phase 1: Requirements

Before starting a designing project, it will need to create the initial documentation that will list the initial requirements needed for Inventory Management System.

### Phase 2: Design

There are two ways in designing the software development of the proposed system: visual design and architectural structure.

During the first iteration, the Project Manager assembles the development team and introduces the following requirements that have been created. The team will discuss what they will do with these requirements and propose the tools that will be required to achieve the best result.

The developers create a smooth and simple UI for the proposed system.

### Phase 3: Development and Coding

The development phase is about writing code and converts design documentation into actual software.

### Phase 4: Integration and Testing

This stage aims to ensure that the software for the proposed system is bug-free and compatible with everything else the developers have already produced. The Quality Assurance team runs a series of tests to guarantee that the code is valid and that the business goals of the solution are accomplished.

### Phase 5: Implementation and Deployment

The software is implemented on servers and made available to users either for demonstration or practical use. Further iterations update the previously installed software, adding new features and fixing bugs.

Phase 6: Review

Once all the phases have been completed, The Project Manager adjourns the Development team and reviews the progress made toward completing requirements. The team presents their ideas for resolving the problems that arose during the previous phases, and the Project Manager considers their proposals.

Project Planning

The project planning phase occurs at the beginning of the project, following the initiation phase, where all you really did was get approval to go ahead and put the basics in place, and before the delivery phase, where you do the work. It also includes the GANNT Chart and Work Breakdown Structures, which may help in project development.

Work Breakdown Structure

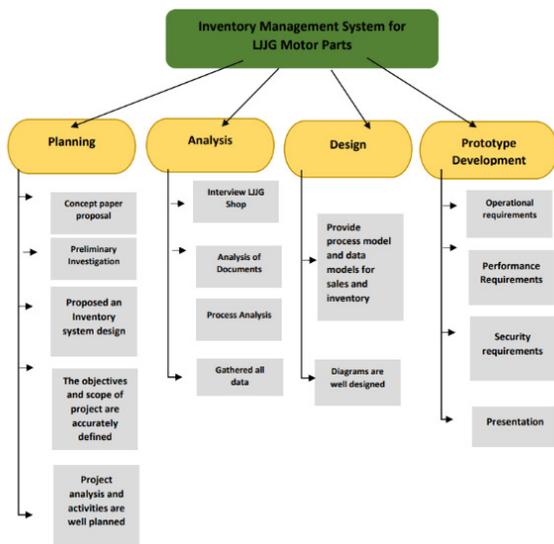


Figure 2. Work Breakdown Structure

The work breakdown structure for the Inventory system of LJJG has 4 phases in project activities which comprise Planning, Analysis, Design, and Prototype Development. These

activities are guides to be able to understand how this project works.

GANNT Chart

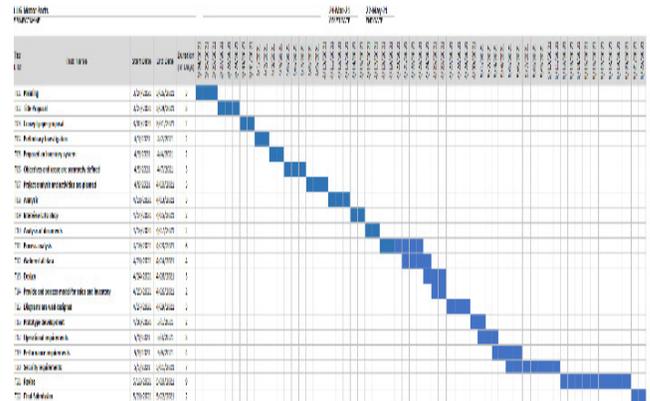


Figure 3. GANNT Chart of Project Activities

Figure 2 above shows the activities for a proposed system that has four-phased which are Planning, Analysis, Design, and Prototype Development, which is the project that was proposed is feasible.

Feasibility Analysis Study

This section is the evaluation of a proposed project to determine if it is technically feasible, feasible within the estimated cost, and will be profitable. The researchers created the following feasibility analysis for the Sales and Inventory Management System of the company LJJG Motorcycle Parts and Accessories. [9] Feasibility is conducted to identify the best system that meets all requirements. This includes an identification description, a valuation of the proposed systems, and a selection of the best system for the job. The requirements of the system are specified with a set of constraints such as system objectives and the description of the outputs. It is the duty of the Analyst to evaluate

the feasibility of the proposed system to generate the results.

Based on our information at hand, the LJJG Motorcycle Parts and Accessories is currently using the old method, which is a manual process in recording, monitoring, and even putting their sales. The proposed system will take over to increase the quality of sales and inventory and to expand the demand of the system to reach the satisfaction of the users. The system will surely be beneficial to the company.

TABLE I  
PROJECTED EXPENSES OF THE PROJECT

	TOTAL
Electricity	₱5,000
Labor: 3 Staffs	₱30,000
Desktop Computer	₱36,999
Receipt Printer	₱1,099
Thermal Paper	₱1,858
Software Microsoft/year Photoshop/year	₱5,000 ₱7,000
TOTAL COST	₱86,956

*Organizational Feasibility*

Individuals are innately impervious to change, and PCs have been known to work with change. A gauge ought to be made of how solid a response the client staff is probably going to have toward the advancement of a computerized system. The users/staff of LJJG Motorcycle parts and accessories never used a computerized system. Most of the staff are not IT literate. Thus, there is a need for a brief introduction to handling the system in order to implement the system. The users who have the right to use the system will need some practice on how to manipulate the system. The users/staff of the Sales and Inventory System of LJJG Motorcycle Parts and Accessories Store are expected to appreciate and find the new system offered easy to use.

The proposed system can be utilized everyday by the company. It can be for a lifetime transaction by the business. It tends to be for the lifetime of transactions by the business. It lessens administrative work and control information got in the system. It minimizes the time in just one click.

TABLE II  
PERSONNEL REQUIREMENTS

JOB		JOB DESCRIPTION
Manager	1	The manager has the responsibility to oversee all functions of the company, handle payable and customer relations. Responsible for the money of the company. He is in charge of the decision making of the company and access of the record in the system. Only the Manager can be able to manage item details, and add or remove information, as to help prevent data breach and observe confidentiality.
Cashier	1	The Cashier is the one who is operating the cash register. They are the one responsible for transacting with the customer in paying bills and issuing receipts.
Salesperson	1	The salesperson is the one who assists the customer, maintaining and ensuring good service specially in locating certain items.
IT personnel	1	The IT personnel is the one who maintains the system in case it causes breakdown and malfunctioning of hardware and software.

*Technical Feasibility*

The system that will be developed requires users to have a background in using computers. Unfortunately, the employees of LJJG Motorcycle Parts and Accessories store are not familiar with computers and don't know how to use one. They don't have a computer in their business and are just planning to provide one for the system. The proposed Sales and Inventory system needs the following hardware requirements in developing the system.

TABLE III  
SYSTEM REQUIREMENTS

System Requirements	Specifications	Total Cost
Desktop Computer	Acer Aspire C24-865 Intel Core i3-8130U Processor (4M Cache, up to 3.40 GHz) 4GB DDR4 SDRAM, 1TB HDD	₱ 36,999
Receipt Printer	Xprinter XP-58IIIH	₱1,099
Thermal paper	Thermal Paper 80x80 Standard Size (50 rolls) 1 box	₱1,858
TOTAL	-----	₱39,956

It is vital to choose the most recent unit model, so it will be ensured that the proposed system will work proficiently and precisely and to avoid disadvantages. It must be a well-known brand of hardware and software in order to get the best system performance, and conflicts should also be avoided to avoid trouble and system crashes, and interruption of system requirements.

*Economic Feasibility*

The system developed and put in is going to be a sensible profit to the organization. The system is going to be developed and operated within the existing hardware and software system infrastructure. [10] Economic analysis is the most frequently used method for evaluating the effectiveness of a candidate system. More commonly known as cost-benefit analysis, the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits

outweigh costs, then the decision is made to design and implement the system. The cost-benefit analysis was performed; see attached spreadsheets for details.

It shows that the system has a good chance of significantly enhancing the company's bottom line. It was found out that the total benefit outweighs the cost of the system. This simply implies that the system is economically feasible.

*Requirements Elicitation*

Interview, the researcher, will conduct a series of interviews to gather information about the events and transactions within the organization that plays an important role in the fulfillment of the study.

Document Analysis, the researcher will examine some records and information, which can be a really big help to be a basis for making a proposal research system. The knowledge gathered from the respondents can create the researcher's style and produce one thing that can be useful; it includes manual transactions and recording data stuff that may serve as a basic material to form automation. And researchers also used related articles for further information.

Research, the researcher used a search engine to search information with regards to the system and the books for additional information.

*Technology and Tools*

These tools are selected by the researchers for developing the proposed system. The following below are the technologies and software tools needed for the system.

Net beans. The primary tool used for coding Browser. This will also be used by the researchers, a tool to read HTML documents or web pages. Software used to retrieve and present information on the World Wide Web.

Microsoft Excel. One of the applications of Microsoft office. This application will be used to manage and generate reports of the system.

Photoshop. It uses a layer-based editing system that enables image creation and altering with multiple overlays that support transparency.

Layers can also act as masks or filters, altering underlying colors. Photoshop actions include automation.

### III. THE PROPOSED SYSTEM

The proposed system is suggested to the owner to keep up with the world's transition into going technological. The proposed system can be accessed by two different accounts; the administrator and the cashier user. Since the proposed system is able to input, edit, and delete items and details, the researchers made it so that the adding, editing, and deleting can only be done by administrators to avoid accidental removal of items or details. Additionally, the proposed system includes qualities and functions such as:

- Easily maneuverable
- Smooth & Simple UI
- Sales Report

#### *Problems and Weakness of the Current System* *Incorrect Data*

Typos, wrongly pressed keys, lack of attention to inputted data are human errors that cannot be fixed by the system. The system would follow data that is manually inputted by administrators and, as such, will encounter problems or difficulties in reading items' bar codes if specific data were inputted wrongly by administrators.

#### *System's Lack of Security*

Hackers, breach of information, whistleblowers, the proposed system cannot protect itself from these attacks and could compromise not only employee's personal information, item details but also owners' information in such scenarios.

#### *Inventory Loss*

Theft, damaged items, cannot be automatically detected by the system, and as such, cannot update nor register data on its own and has to be manually done by the system's administrators.

#### *System Crashes*

As the system relies on electricity and computer power, defective or deteriorating parts

of the technology and power outages could result in the system crashing —resulting in data loss.

### Functional and Non-Functional Requirements

#### Non-Functional Requirements

##### 1. *Operational Requirements*

The system is to be operated with the use of technology, such as the computer. Because LJGG Store does not own a computer, they will need to purchase a computer necessary to operate the system that will be able to handle huge amounts of data.

##### 2. *Performance Requirements*

A delay in response should not reach more than 3 seconds as not to inconvenience the system user and the customers, which will allow for faster and smoother transactions between the two.

##### 3. *Security Requirements*

The company must assign who will have the role of being the administrator and the cashier. Only the administrators will be able to manage item details and add or remove information to help prevent data breaches and observe confidentiality.

#### Functional Requirements.

##### 1. *Log In*

The first process that the system will show is the process of asking the user to input his/her username and password.

##### 2. *Verify password*

After asking the system users their username and passwords, the system should be able to verify whether or not the inputted username or password is correct or incorrect. It should display an error message if the inputted information is incorrect.

##### 3. *Database Update*

Administrator accounts should be able to add new items, remove, edit or update existing data.

##### 4. *Generate Sales Report*

The systems would be able to calculate daily, weekly, and monthly sales, which would allow

the company owner to check on the company's gains and losses.

**Use Case Diagram**

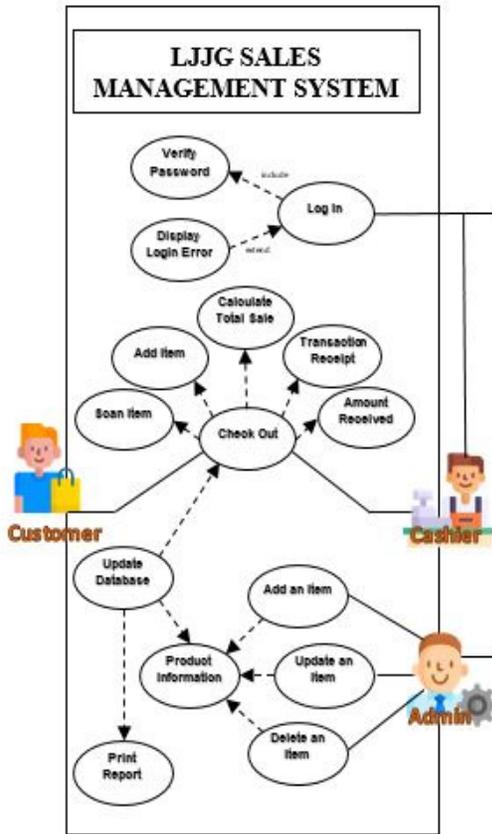


Figure 4. Use Case Diagram of LJJG Management System

Above is the Use Case Diagram that shows the different use cases and their relationships with the actors. The diagram includes three main actors, namely; Customer, Cashier, and the Admin or Administrator. These three actors help illustrate how the actors interact with the proposed system and what functions the system possesses.

**System Flowchart**

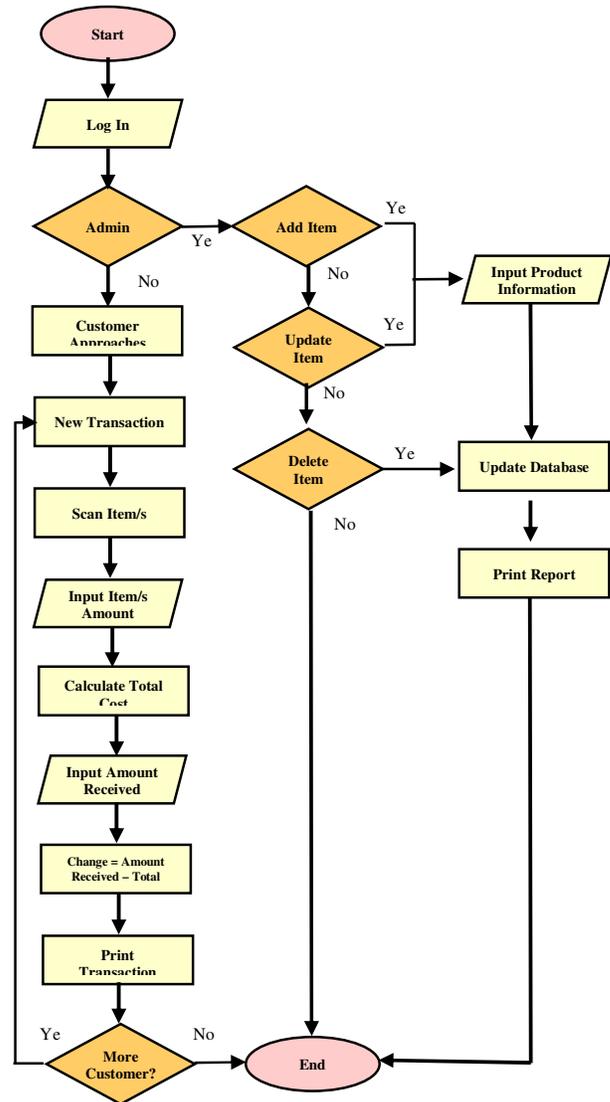


Figure 5.LLJG Sales and Inventory System Flowchart

The figure above illustrates the proposed system's flow. It shows how the system operates through user interaction and the processes it goes through.

**Data and Object Modelling**

In this section, a flow diagram and entity relationship will be put in figures to show and

further elaborate the structure and design of the system.

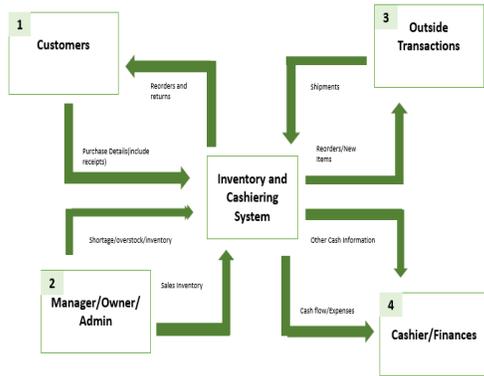


Figure 6. Context Data Flow Diagram

The exhibited figure above is an example of a graphical representation in the data flow. This is mostly used informally, presenting relationships of process and exchange of information. In this case, the input and output method of the system is progressively shown to understand the sequence of the data and how it yields to storing all the gathered entries via progressive transformation.

Exhibited in the Context Data Flow above shows the direct relationship of the main actors in the system that is about to be developed. The named actors are Admin, Customers, and Cashier, which are also shown in the Use Case in the previous sections.

This method is considered as a single processing method that feeds the system with all the gathered data from the factors included, namely Customer, Cashier, and Administrator. The data gathered will be uploaded in the system and will be stored for inventory purposes.

### Entity Relationship Diagram

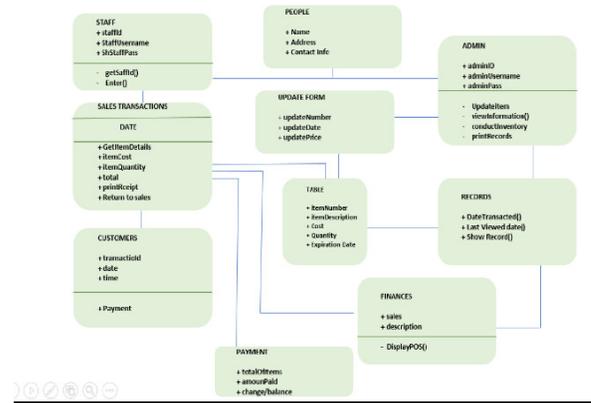


Figure 7. Entity Relationship Diagram

The entity Relationship diagram will show the blueprint of the storage areas in the system. It is categorized by different classes that will encapsulate the data that belongs to it and store it for inventory or review purposes. Each class has attributes that describe or differentiate classes depending on their state and/or properties. In this case, there will be classes that will perform the function or will execute. And just like any other diagram used in this research, this one also shows relationship between all the factors or classes involved.

### Data Dictionary

TABLE	FIELD	TYPE	DESCRIPTION
People	Username_id	Integer	Identification for the for the user address
	Address	Varchar	Address of the user
	Contact_info	Integer	Contact of the user
Admin	Admin_id	Integer	Primary key for the Admin identification
	Username	Integer	Name of the admin user
	Password	Varchar	Security password of the admin user
Staff	Staff_id	Integer	Identification for the for the user address
	Staff_Name	Varchar	Name of the staff
	Password	Varchar	Security password of the staff
Customers	Transaction_id	Integer	Unique combination of numbers assigned to each transaction
	T_Date	Integer	Date of transaction
	T_Time	Integer	Exact time of transaction
Payment	Total	Integer	Total amount of the items purchased
	Amount_Paid	Varchar	Total amount paid by the customer
	Balance	Varchar	Refers to the balance of the total amount paid if there's any
Products/Items	Item_Num	Integer	A unique assigned combination of numbers for each item
	Price	Integer	The cost of the purchased item
	Quantity	Varchar	Number of items purchased
	Brand	Varchar	The brand of items
Update Form	Update_Date	Varchar	Date updated
	Update_Price	Varchar	Updated Price
	Update_id	Varchar	Updating Identification
Finances	Sales_id	Integer	Unique combination of numbers assigned for a specific sale

Figure 8. Data dictionary

### System and User Testing Plan

System testing will be categorized into different areas. As the system will be a

multifunctional system, this will be tested according to user testing, developer testing, and customer testing. The primary goal of this testing is to make sure that the system will accurately serve its purpose, and each function of the system will cover the need or requirement of the organization it is developed for.

*A. Developer Testing*

All the data gathered from the users of the system will be stored in the Microsoft database. Therefore, it is important that we ensure the capability and efficiency of the storage. With that, the testing will include other functionalities and logical errors. Furthermore, we will be conducting up to 150 records of products to participate in the run-through of the database.

*B. User Review*

This will be post-developing testing, as this will be done after the developing stage of the proposed system. All of the events in this testing will be recorded and are not just limited to the error and success, as we will be including all the parts that are not too friendly for the staff. And in addition to that, staff who will be testing the system will have a briefing on how they are expected to utilize the system. That way, they know what to do and what to expect as system response.

The testing procedure is as listed:

- Since the organization staff has no solid background in utilizing any system and IT in general, the testing will be divided into subgroups. Half of the employees will be doing their usual tasks using the traditional way, and the other half will be doing their tasks using the proposed system. They will be attending to the needs of their clients/customers all at the same time. This will be done for half of their shift.
- In the other half of the shift, there will be an exchange of positions. The other half that was previously assigned to attend

clients the traditional way will now be using the system, and the other half will do the work in a traditional way. After the shift, questionnaires will be given out to gather their experiences, and those will be taken into account.

## **VI. CONCLUSION AND RECOMMENDATION**

### **Conclusion**

After gathering data and conducting interviews, we completely design and create our proposed inventory system based on our objectives. We are able to create a design and flowchart of a system that will record and produce sales and support. We also provide process models and data models for the sales and inventory process of the proposed system. And lastly, we design an information system that will monitor their stocks and products.

The developers, therefore, conclude that sales and inventory system management for LJJG motor parts is the solution to their manual process of inventory and record keeping. The shop encountered different issues and problems such as the inefficient way of keeping sales transaction resulted in the loss of Sales, inconsistent way of handling receipt, which may result in the tedious task and inconsistent way of monitoring the inventory status, which resulted to out of stock and theft. After gathering information on sales and inventory system management, we are come up with the conclusion that this study will be very helpful to any company, especially in LJJG motor parts as well as the business industry, to minimize error on recording inventories and everyday transaction and to avoid understocking and overstocking of the materials.

### **RECOMMENDATION**

The tool that is suited for this system is barcode data collection. Manual reporting can be plagued by delays, errors, missing transactions,

and an undue burden on the workforce to collect and enter the data. Automated data collection, most often through barcode scans, removes much of the reporting burden while greatly improving the accuracy and timeliness of transactions [11].

There is also one of the powerful inventory tools in inventory management software which is the Reorder alerts. These reorder alerts or low inventory alert alerts will appear in your inventory management system to alert the user of when it's time to reorder a certain item. The alert will appear when the product level reaches the predetermined reorder level. The inventory management system is able to do this because it is able to see the amount of each product (even if they are in multiple locations, warehouses, etc.) and see when the overall product level has become low.

The recommendation was based on the findings in this study that, in order for firms to improve their sales and proper control of their products and stocks, they should need to implement an inventory management system. Also, employers should enlighten on the management system on inventories from effective and efficient in improvement of organization performance. The LJJG motor parts should implement this inventory system management so that they will be able to control their stocks and products.

#### ACKNOWLEDGEMENT

First of all, we would like to thank God for giving us strength and guiding us in our research paper and to give us knowledge and wisdom. That's why we are able to do our task in making this research paper on behalf of our team. We would like to express our deep sense of gratitude to LJJG motorcycle parts and accessories, especially to the owner of this store, for being part of our research and to agree that their store will be used as our reference in our SAD project.

We would also thank professor Mark Van Buladaco for his full support and for guiding us in doing our research paper. And to all people,

especially to our parents who help us and supporting us, without all of you, we cannot successfully do this. We are so much grateful and blessed.

#### REFERENCES

- [1] "Material Handling", *Mhi.org*, 2021. [Online]. Available: <https://www.mhi.org/fundamentals/material-handling>. [Accessed: 08- May- 2021].
- [2] "The Ins and Outs of Inventory Management", *Investopedia*, 2021. [Online]. Available: <https://www.investopedia.com/terms/i/inventory-management.asp>. [Accessed: 08- May- 2021].
- [3] R. Harman, E. Morris and B. Walker, "How Inventory Management Benefits Startups & Scaleups", *StartUs Magazine*, 2021. [Online]. Available: <https://magazine.startus.cc/inventory-management-benefits-startups-scaleups/>. [Accessed: 09- May- 2021].
- [4] "Sales and inventory System - Business," StudyMoose, 09-Sep-2016. [Online]. Available: <http://studymoose.com/sales-and-inventory-system-business-essay>. [Accessed: 11-May-2021]
- [5] Stevenson, B. (2010). *Operations management* (10th ed.). New York: McGraw Hill Publishing.
- [6] Deveshwar, A., & Dhawal, M. (2013). *Inventory management delivering profits through stock management*. World Trade Centre, Dubai: Ram University of Science and Technology.
- [7] Naliaka, V. W., & Namusonge, G. S. (2015). Role of inventory management on competitive advantage among manufacturing firms in Kenya: A case study of Unga Group Limited. *International Journal of Academic Research in Business and Social Sciences*, 5(5), 87–104.
- [8] Li, S. R., Ragu-Nathan, B., Ragu-Nathan, T. S., & Subba Rao, S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34(2), 107–124. doi:10.1016/j.omega.2004.08.002
- [9] International Journal of Modern Trends in Engineering and Research (IJMTER) Volume 03, Issue 04, [April– 2016] ISSN (Online):2349–9745 ; ISSN (Print):2393-8161
- [10] p. gp, "P 00447 Pharmacy Database Management System in VB", *Academia.edu*, 2021. [Online]. Available: [https://www.academia.edu/28166788/P\\_00447\\_Pharmacy\\_Database\\_Management\\_System\\_in\\_VB](https://www.academia.edu/28166788/P_00447_Pharmacy_Database_Management_System_in_VB). [Accessed: 1- Jun- 2021].
- [11] MYOB Pulse. 2021. 5 tools for modern inventory management - MYOB Pulse. [online] Available at: <https://www.myob.com/au/blog/5-tools-for-inventory-management>
- [12] "Agile Methodology and System Analysis", *Umsl.edu*, 2021. [Online]. Available: [http://www.umsi.edu/~sauterv/analysis/Agile%20Methodology%20and%20System%20Analysis.htm?fbclid=IwAR3vyBXeIR5p4YjtxrAmVvtLrhV3DkDAAak4BbUSRKIybs6QiEc\\_5ERGO7A](http://www.umsi.edu/~sauterv/analysis/Agile%20Methodology%20and%20System%20Analysis.htm?fbclid=IwAR3vyBXeIR5p4YjtxrAmVvtLrhV3DkDAAak4BbUSRKIybs6QiEc_5ERGO7A). [Accessed: 20- May- 2021]