

## **CHAPTER I**

### **PROJECT DEFINITION**

#### **A. Introduction**

Nowadays, not only groceries and stores are in need of computerized point of sales, but also other establishments such as hardware, lumbers and the like. They also need to keep track of their business as they grow. But as the business gets bigger and bigger, the more complicated the situations are becoming. Problems are starting to occur and sometimes, they weren't able to cope up with it manually. Word processors and spreadsheets are not enough to handle complex situations of a company with growing needs. So the researchers proposed a computerized system that'll help them do their job easier.

This century, technology continues to improve and produce a great impact to redefine the way we live. Especially on the field of business, knowing which products are sold and which are not, keeping a track of sales and inventory will meant a great help to make transactions much easier, resulting to a great possibility of sales and profit increment.

Sales and Inventory System is a computerized system that would be responsible for the computing and recording data, sales and inventory. By means of this, transactions will be well-organized. Since sale is the act of vending a product or service in return for money or other reparation, a system that can help through the exchange will be a lot handy. And since inventory is a complete list of items such as property, goods in stock, or the contents of a building, a software that can help through the inventorying can put a company's goals to success.

## **B. Background of the Organization**

### **1. Vision**

To be a major player in the construction industry and to maintain its hold as the leading supplier of hardware and construction materials within the locality for the years to come.

### **2. Mission**

To provide the growing market with quality hardware and construction materials at the most reasonable price possible.

### **3. History**

Emrian Lumber and Hardware was established on January 1982 as single proprietorship owned by M. Antonio S. Yang. After seeing the need for a local supplier of hardware items and construction materials for developing municipality, Mr. Yang put up the hardware store at the very heart of the municipality. It was the first and only hardware store established in the Municipality of Gloria, Oriental Mindoro.

The hardware business of Mr. Yang grew tremendously during the next ten years being a reliable supplier to the growing need not only for the developing town where it is located but also the neighboring municipality. During those years, the construction arm of Mr. Yang's sprawling business was established, the A.S. Yang Construction. A.S. Yang construction ventured into school building constructions, road concreting of barangay roads and highways being the hardware store as its supplier.

With the emergence of the financial crisis that hit every businesses and the emergence of competition, the hardware store slowed down in terms of sales generation. However, with the able management of the owners, the company weathered the storm and has maintained its status as a major market player within the locality.

On 2007, the management of the hardware business was hands down by Mr. Yang to one of his daughter, Karen Yang-Bernabe. Until now, the company has maintained to be one of the major providers of all kinds of hardware and construction materials. Recent notable projects supplied by the company include the supply of materials for the renovation of flying school at Pinamalayan Airport by Civil Aviation Authority of the Philippines, supply for the various projects of Municipality of Gloria, supply for the construction of TESDA Bldg. by AS Yang Construction, etc.

#### **4. Goals and Objectives of the Organization**

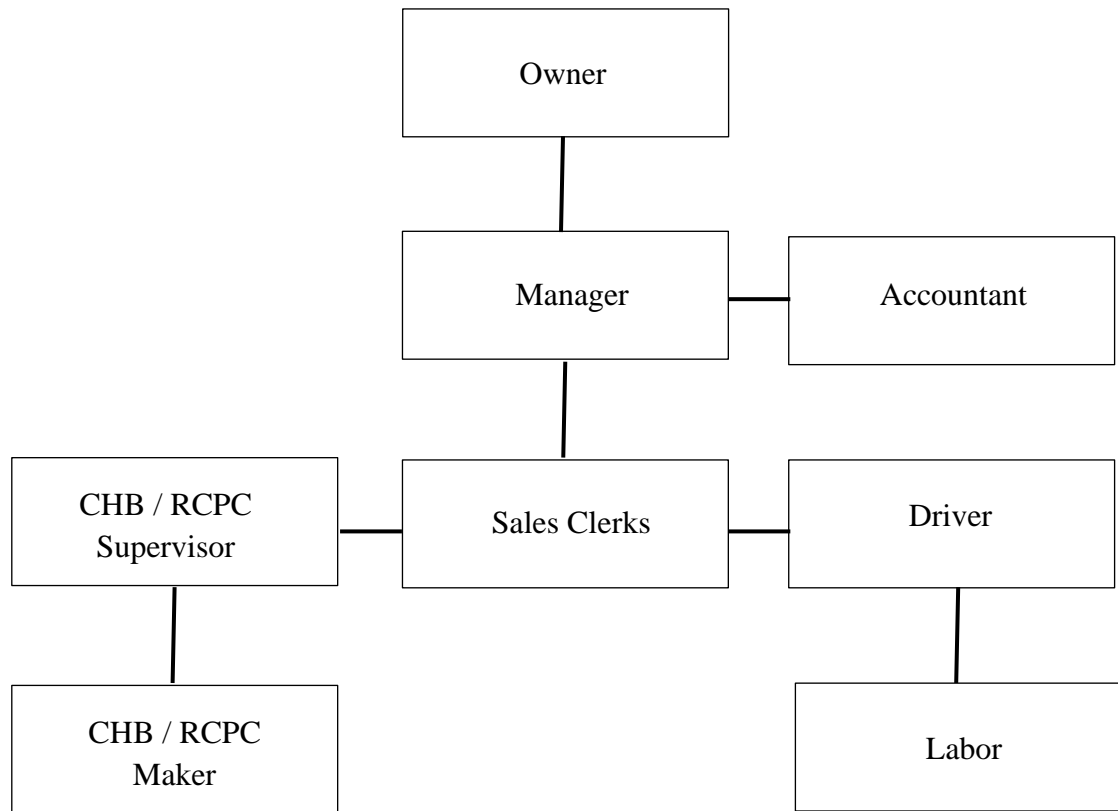
With the growing demand for hardware materials in creating finer establishments of today, New Emrian Hardware aims to be first in line in giving the best products and services a company can offer, and to be one of the trusted names on construction industry.

New Emrian Hardware relies on offering the best products and services they can give in order to deliver the very best. Trusted product names and trained man power are their keys on becoming the most trusted hardware and construction company in the locality.

#### **5. Services/Products**

New Emrian Hardware offers products ranging from adhesives, glue and tapes (adhesives, super glues, masking and carpet tapes) building materials and supplies (sheetings, ceiling materials, roofing materials, insulations, metal goods, wood products, ventilation, bricks and accessories) paint and decorating (brushes, rollers, paints, sealants, ladders, tiles and flooring) plumbing materials (bathroom fixtures, faucets and showers, drain cleaners) electricals (extension cords, power strips, cables and wires, batteries and chargers, power supplies) home safety materials (locks and security safes, fire safety, emergency lights) home basics (kitchenwares, lightning) powertools (heat guns, grinders and saws, drills and screwdrivers, toolbox and accessories). Services include sales, delivery, contracting and estimate.

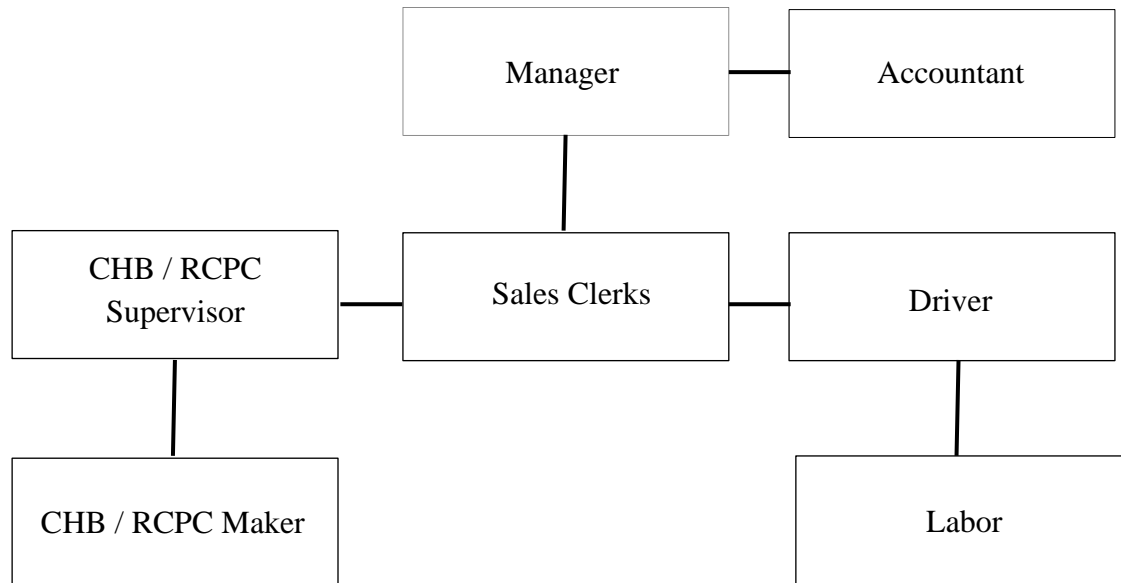
## 6. Organizational Structure



*Figure 1*  
*Organizational Structure of New Emrian Hardware*

The owner supervises everything. Next to him is the Manager, which serves as the Accountant too. Under him are the Sales Clerks, CHB/RCPC Supervisor which handles CHB/RCPC Maker, and the Driver which handles the Laborers.

## 7. Operational Structure



*Figure 2*  
*Operational Structure of New Emrian Hardware*

The manager which serves as the accountant at the same time was in charge in distributing information and tasks among the Sales Clerks, CHB/RCPC Supervisor and Driver. He is involved in planning and strategizing market plans. He makes sure that products and services are well served to customers. While those under him, ensures that the tasks given were properly carried.

## C. Project Overview

### 1. Statement of the Problem

The study focuses on the development of the sales and inventory system of the New Emrian Hardware wherein they need a real-time point of sale system to keep track of records of their sales, create an inventory for both the sales and products,

record information of the suppliers, customers and employees and create a backup of records both hard and soft copy. Problems are such:

- 1.1 Slow transactions and computations
- 1.2 Being unable to keep important data
- 1.3 Bulky papers and so much paper works
- 1.4 Data storing that has low security
- 1.5 Data inputted are inaccurate

## **2. Objectives of the Study**

The study aims to produce interactive, easy-to-use sales and inventory system that will help the user to easily process records regarding the monitoring of the sales and inventory facility of the company and to innovate the traditional way of record-keeping.

- 2.1 Speed up transactions and computations
- 2.2 Keep track of important records and data
- 2.3 Reduce bulky paper works
- 2.4 Secure stored information's
- 2.5 Keep accurate data

## **3. Significance of the Study**

The company will be able to use a computer program which will help them a lot especially in their business which is in need of technological innovation.

The owner will have the advantage and lead than the competitors who don't have a computerized system.

The manager will be able to manage the job easily.

Customer will be benefited in a way that transactions will be faster and more accurate on their part since the process is computerized.

Researchers will be benefited in a way that they'll be able to learn something new at the same time, being able to pass the curriculum.

Future researchers will be able to find ideas and use this study as a reference to their study especially when it regards to sales and inventory facility.

#### **4. Scope and Limitations**

The study will focus on the development of Sales and Inventory System for the New Emrian Hardware.

The scope of the project will only include the following:

- 4.1 Log-in feature that determines user-level accessibility
- 4.2 Password encryption
- 4.3 First-in First-out System
- 4.4 Show inventory in a categorized and detailed view
- 4.5 Monitor sales, income, fast moving and slow moving items
- 4.6 Generate warnings when products are out of stock
- 4.7 Generate daily, by range, monthly and annual reports
- 4.8 Compute customer bill and print receipts (unofficial)
- 4.9 Discounting system
- 4.10 Show delivered items from suppliers
- 4.11 Create Daily Logs
- 4.12 Backup and restore database
- 4.13 Add categories and subcategories
- 4.14 Barcode reading technology
- 4.15 Uploading of pictures
- 4.16 Client-server architecture

The limitations of the project will only include the following:

- 4.17 Credit cards and checks processing
- 4.18 Online processing

## CHAPTER II

### FUNCTIONAL SPECIFICATION REPORT

#### A. Current IT Environment/Infrastructure

The New Emrian Hardware has one (1) laptop computer.

##### 1. Hardware Specifications

Processor	AMD E-450 APU with Radeon(tm) HD Graphics (2 CPUs), ~1.6GHz
Memory	4GB of RAM
Hard Disk	450GB WDC WD32 00BPVT-55JJ5T0 SATA Disk Device
Display Card	AMD Radeon HD 6320 series Graphics
Mouse	Synaptics PS/2 Port TouchPad HID-compliant mouse
Keyboard	USB Input Device
USB Ports	USB Root Hub
CD ROM	ELBY CLONEDRIVE SCSI CD-ROM Device MATSHITA DVD-RAM UJ8B0 SATA CD-ROM Device
LAN Card	Atheros AR8151 PCI-E Gigabit Ethernet Controller (NDIS 6.20) Atheros AR9285 Wireless Network Adapter
Modem	Printer/ Scanner/ Copier/ Fax - Canon MX426 4-in-1
Printer	Printer/ Scanner/ Copier/ Fax - Canon MX426 4-in-1

*Table 1*  
*Hardware Specifications of Workstation*

The New Emrian Hardware has one laptop computer. It was used by the accountant for checking out prices and recording transactions.



## 2. Software Specifications

Operating System	Windows 7 Home Basic 64-bit (6.1, Build 7601) Service Pack 1
Productivity Tools	Microsoft Office Standard 2010 v14.0.4763.1000
	Microsoft Excel 2010 v14.0.4763.1000
	Aiphalist Data Entry and Validation version 3.4
	Relief Data Entry System 2.1 Bureau of Internal Revenue

*Table 2*  
*Software Specifications of Workstation*

The laptop computer of New Emrian Hardware consists of the above software specifications. The standard Microsoft Office consisting of productivity tools such as Microsoft Word 2010 and Microsoft Excel 2010 which is often used. And the Aiphalist and Relief Data Entry Systems that they use for data entries.

## 3. Network Architecture

The laptop computer in New Emrian is a stand-alone computer but has access to internet.

## 4. Manpower

The following includes the workers and personnel of New Emrian and their respective duties and responsibilities:

### 4.1 Owner

- Owner of the company

### 4.2 Designation

- Overall in-charge of company operations
- Monitor sales and level of inventory
- Place order to suppliers for stock replenishment
- Sign checks for payment to suppliers
- Attend to customer needs

#### 4.3 Accountant

- Prepare VAT and Income Tax Returns for submission to BIR
- Prepare Annual Audited Financial Statements
- Compliance of requirements with Government Agencies concerned

#### 4.4 CHB/RCPC Supervisor

- Supervise the operation in the production of CHB and RCPC
- Maintain quality of production
- Attend to grievances and needs of the labor force
- Communicate with the Manager on grievances and needs of production

#### 4.5 Sales clerk

- Attend to customer needs in the establishment

#### 4.6 Driver

- Deliver items to customers
- Maintain the condition of the delivery truck and repair delivery truck if necessary

#### 4.7 CHB/RCPC Maker

- Makes CHB and RCPC

#### 4.8 Labor

- Paid to do the labor and different tasks that needs manpower.

### **5. Back-up and Recovery Procedure**

Because of the non-existing systematical procedures for backup and recovery, the company retrieves their records by means of:

- External Hard Disk
- Partitioning of Internal Hard Disk
- Cabinets and Folders
- CDs/DVDs

The company's backup files (soft copy) are stored on an external hard disk, blank CDs and DVDs and partitions of internal hard disk while the printed copy of records, transactions and financial papers are stored on folders and cabinets.

## B. Data Requirements

### 1. Forms


#### 1.1 List of Forms

No.	Name of Form	Description	Users
1	Sales Invoice	Serves as the billing for the customer. Shows the sales ordered being processed. Issued as a demand for payment	Administrator
2	Delivery Receipt	Produced upon when the products are delivered	Administrator
3	Official Receipt	Receipt of Payment	Administrator

*Table 3*  
*List of Input Forms*

This table shows all the forms needed to be filled-up. The transaction will occur when the customer ordered or bought products to New Emrian. Upon checking the availability of the products, the Sales Invoice and Delivery Receipt is produced. It will be signed after having the Delivery Receipt signed by the receiver. Upon receiving the payment, it will result to the creation of the Official Receipt. The Official Receipt will be used to update the inventory of sales while the delivery receipt is to update inventory of products.

Figure 3  
Sales Invoice



**NEW EMRIAN  
HARDWARE**  
MALIBAYA, OLORIA, ORIENTAL MINDORO  
TEL. NCNOS. (0433) 2894-4385 / (03938) 874-2888

*Figure 4*  
*Delivery Receipt*

Settlement of the following:	
Invoice No.	Amount
Total Sales	
Less: VAT	
Total	
Less: ODPWD Discount	
Total Due	
Less: Withholding Tax	
Amount Due	
Retable Sales:	
Less Exempt Sales	
Zero Rated Sales	
VAT Amount	
Total Sales	
Form of Payment	
Cash <input type="checkbox"/>	Check <input type="checkbox"/>

**NEW EMRIAN HARDWARE**

Maligaya, Gloria, Oriental Mindoro

**KAREN Y. BERNABE** - Prop.

VAT Reg. TIN No. 929-195-969-000

OFFICIAL RECEIPT

Date \_\_\_\_\_

Received from \_\_\_\_\_ with TIN \_\_\_\_\_

and address at \_\_\_\_\_ engaged in the

business style of \_\_\_\_\_, the sum of \_\_\_\_\_ pesos

(P. \_\_\_\_\_) In partial/full payment for \_\_\_\_\_

Sr. Citizen TIN _____	
OSCA/PWD ID No. _____	Signature _____

By: \_\_\_\_\_

Cashier/Authorized Representative

N<sup>o</sup> 0123

©Bids: (2X) 0001-1250 BIR Authority to Print No. 1A(U000150)852

Was Issued: 07-10-13 Valid until: 07-10-18

LA Printing & General Merchandise

3mm/1 Stail C., Calero, Calapan City

043-333-231-000

THIS OFFICIAL RECEIPT SHALL BE VALID UP TO JULY 10, 2018

Printer's Accreditation No. PROVAN002329

Date Issued: 02-15-13

*Figure 5*  
*Official Receipt*

## 1.3 Data Dictionary of Forms

ID	Data Element	Description	Data Type	Length	Domain	Sample Data
	Sold to	Name of the Customer	String	50		Mr. Andro Landicho
	TIN	Taxpayer Identification Number	Numeric	12		001-001-003
	Address	Address of the Customer	String	100		Langgang, Oriental Mindoro
	Business Style	Business Style	String	100		Commercial
	Date	Date of Transaction	Date	8		01-10-14
	Terms	Terms	String	100		Terms
	OSCA/ PWD ID No	Person with Disability Identification No.	Numeric	12		0001-001
	Cardholder's Signature	Signature of the Customer	String	100		Bernabe
	Quantity	Quantity per purchased product	Numeric	6		1000
	Unit	Entity or Whole	String	100		Pcs
	Articles	Name of Product	String	100		Paint
	Unit Price	Price per product	Decimal	(6,2)		250.00
	Amount	Total Amount per Quantity	Decimal	(6,2)		1500.00
	Total Sales	Total Amount of Sold Products	Decimal	(6,2)		1700.00
	Less VAT	VAT deducted	Decimal	(6,2)		10.00
	Amount Net of VAT	Amount Net of VAT	Decimal	(6,2)		15.00
	Less SCPWD Discount	Total Discount	Decimal	(6,2)		90.54
	Amount Due	Total Amount of Sold Products	Decimal	(6,2)		500.00
	Add VAT	Value that was added to a certain product	Decimal	(6,2)		15.00
	VATable Sales	VAT must be paid	Decimal	(6,2)		5.00

	VAT exempt Sales	Exempt from VAT	Decimal	(6,2)		754.24
	Zero Rated Sales	VAT at Zero Percent	Decimal	(6,2)		0.00
	VAT Amount	Total amount of VAT	Decimal	(6,2)		10.25
	Total Amount Due	Total Price	Decimal	(6,2)		3500.00
	Cashier/ Authorize Representative	Receiver/Cashier	String	100		Ebson John Bernabe

*Table 4*  
*Sales Invoice Data Dictionary*

ID	Data Element	Description	Data Type	Length	Domain	Sample Data
*	Delivered To	Name of the Client	String	15		Mr. Arnel Santos
	Address	Address of the Client	String	100		Langgang, Oriental Mindoro
	Date	Date of Delivery	Date	8		03-16-13
	Quantity	Quantity per purchased product	Numeric	6		1000
	Unit	Entity or Whole	String	100		Pcs
	Description	Name of Product	String	100		Vulca Seal
	UP	Unit Price	Decimal	(6,2)		25.00
	Amount	Total Amount per Quantity	Decimal	(6,2)		1500.00
	Total	Total Price	Decimal	(6,2)		3500.00
	Received	Receiver/Cashier	String	100		Ebson John Bernabe

*Table 5*  
*Delivery Receipt Data Dictionary*



ID	Data Element	Description	Data Type	Length	Domain	Sample Data
*	Total Sales (VAT Inclusive )	Total Sales inclusive the VAT	Decimal	(6,2)		10.00
	Less: VAT	VAT deducted	Decimal	(6,2)		10.00
	Total	Total Price	Decimal	(6,2)		3500.00
	Less: SC/PWD Discount	Discount if person is with disability	Decimal	(6,2)		10.00
	Total Due	Total Amount	Decimal	(6,2)		1500.00
	Less: Withholding TAX	Tax deducted	Decimal	(6,2)		25.00
	Amount Due	Amount Paid	Decimal	(6,2)		1768.00
	VaTable Sales	VAT must be paid	Decimal	(6,2)		5.00
	VAT exempt Sales	Exempt from VAT	Decimal	(6,2)		754.24
	Zero Rated Sales	VAT at Zero Percent	Decimal	(6,2)		0.00
	VAT Amount	Amount of VAT	Decimal	(6,2)		125.00
	Total Sales	Total Income	Decimal	(6,2)		10000.00
	Form of Payment	Cash/Check	String	100		2800/ Two Thousand Eight Hundred
	Date	Date of Delivery	Date	8		01-10-14
	Received from:	Name of the Entrepreneur	String	100		Ebson John Bernabe
	TIN	TIN No.	Numeric	15		0332-224-242
	Address at:	Address of the Client	String	100		Maragooc Gloria, Oriental Mindoro
	Business Style of:	Business Style	String	50		Commercial
	Total Amount of:	Total Amount	Decimal	(6,2)		30.00

	Payment	Payment in Numeric	Decimal	(6,2)		2900.00
	Payment for	What has been bought	String	100		Hammer
	Sr. Citizen TIN	Sr. Citizen's TIN No.	Numeric	15		24343-3423-354
	OSCA/ PWD ID No	Person with disability ID No.	Numeric	15		0001-001
	Signature	Signature/ Name of the Client	String	50		Mark Andro de Chavez
	Cashier/ Authorized Representative	Name/Signature of the Owner/Cashier	String	30		Ebson John Bernabe

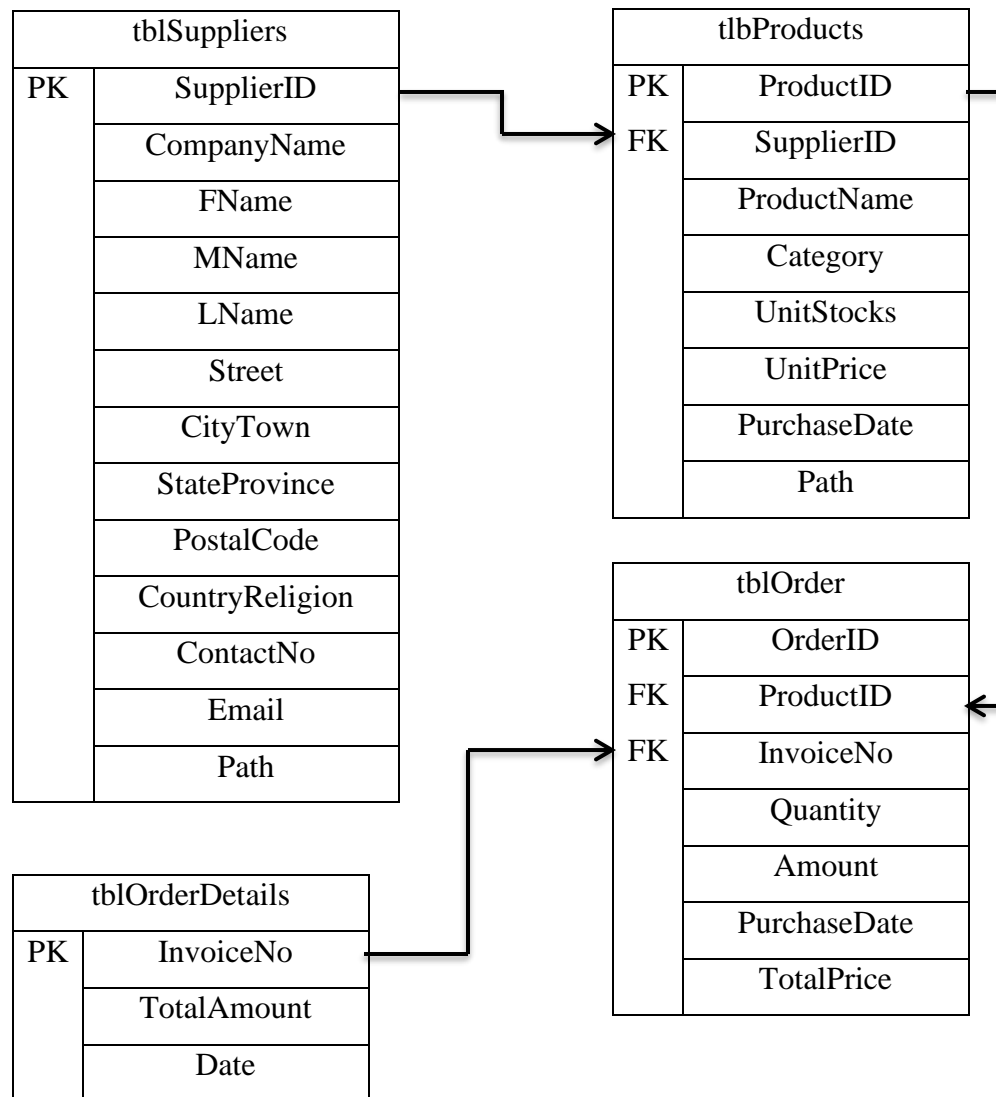
*Table 6*  
*Official Receipt Data Dictionary*

## 2. Reports

There are no (0) reports currently used.

### 3. Logical Data Structures

#### 3.1 Entity Relationship Diagram (ERD)



*Figure 6*  
*Entity Relationship Diagram of*  
*New Emrian Sales and Inventory System*

## 3.2 Data Dictionary of ERD

Data Element	Description	Data Type	Length	Sample Data
InvoiceNo	Invoice Identification	int	6	112
TotalAmount	Total amount of the products	decimal	(6,2)	12.00
Date	Date of order	date		6/15/2014

*Table 7*  
*OrderDetails Data Dictionary*

Data Element	Description	Data Type	Length	Sample Data
OrderID	Order identification	int	6	101
ProductID	Product identification	int	6	50
PurchaseDate	Date of purchase	date		5/25/2014
Quantity	Number of products ordered	int	6	25
Amount	Amount of the product	decimal	(6, 2)	2580.00
InvoiceNo	Invoice Identification	int	6	56
TotalPrice	Total amount to be paid	decimal	(6,2)	100.00

*Table 8*  
*tblOrders Data Dictionary*

Data Element	Description	Data Type	Length	Sample Data
ProductID	Product Identification	int	6	1231
ProductName	Name of product	varchar	50	boysen
Category	Category of product	varchar	50	Paint
UnitStocks	Number of stocks	int	6	100

UnitPrice	Price per quantity	decimal	(6, 2)	24.00
PurchaseDate	Date of purchased product	date		8/15/2014
Path	Path of image	varchar	MAX	C:\Users\hiddcel\Desktop\DATABASE\images (7).jpg
SupplierID	Supplier Identification	int	6	111

*Table 9*  
*tblProducts Data Dictionary*

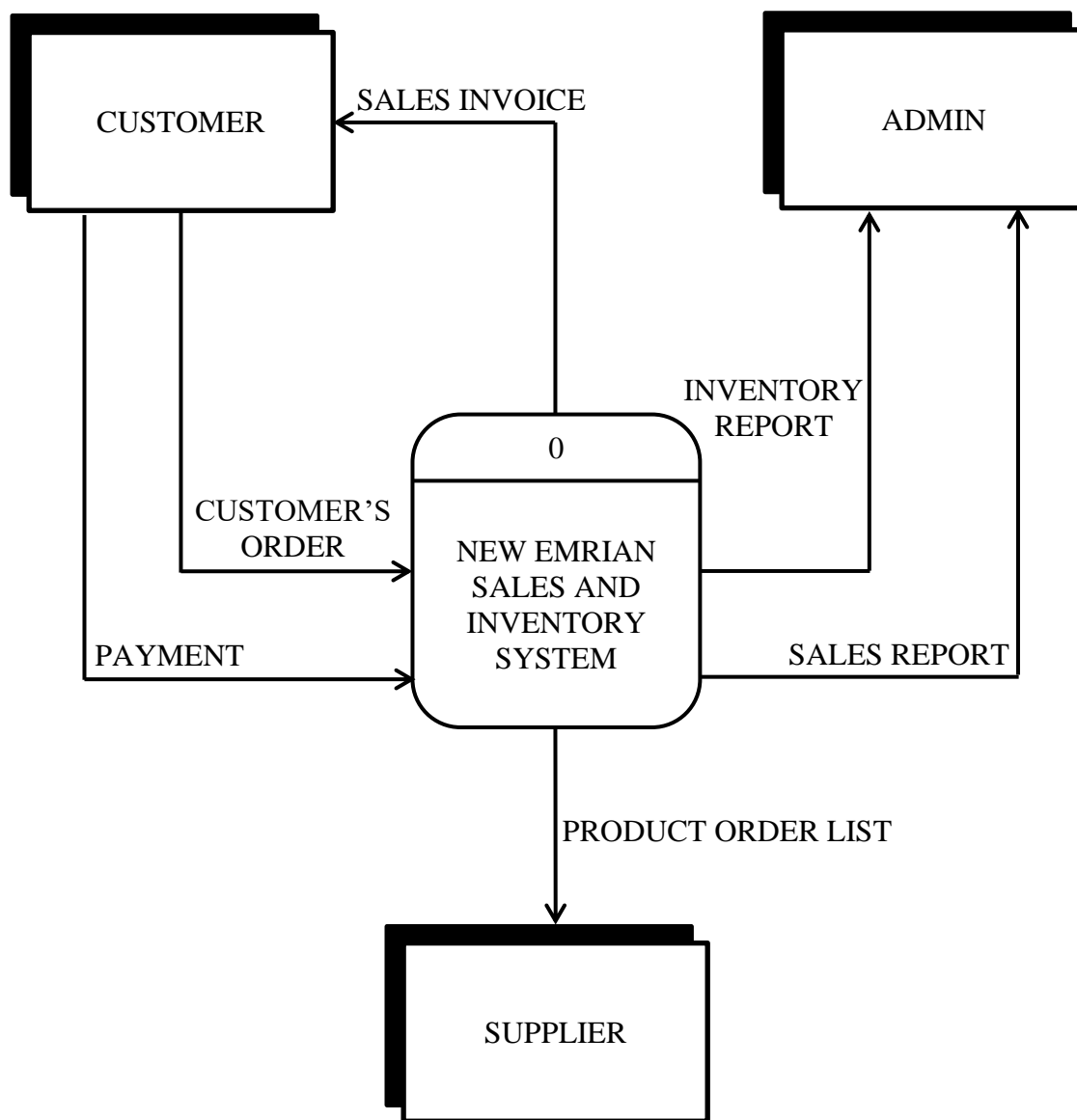
Data Element	Description	Data Type	Length	Sample Data
SupplierID	Supplier's identification	int	6	12
CompanyName	Name of company	varchar	50	Emrian
FName	First name	varchar	50	Hiddcel
MName	Middle name	varchar	50	Mallorca
LName	Last name	varchar	50	Cornejo
Street	Name of street	varchar	50	Santa Rosa
CityTown	City name or name of town	varchar	50	Bansud
StateProvince	State name or province name	varchar	50	Mindoro
PostalCode	Postal code	int	6	5210
CountryReligion	Country name or name of religion	varchar	50	Catholic
ContactNo	Contact number	varchar	13	+639469665531
Email	Email of supplier	varchar	50	hiddcel@yahoo.com
Path	Path of image	varchar	MAX	C:\Users\hiddcel\Desktop\DATABASE\images (7).jpg

*Table 10*  
*tblSuppliers Data Dictionary*

## C. Procedures and Policies

### 1. Procedure

#### 1.1 Context Diagram



*Figure 7*  
*Context Diagram of*  
*New Emrian Sales and Inventory System*

1.2 Diagram 0

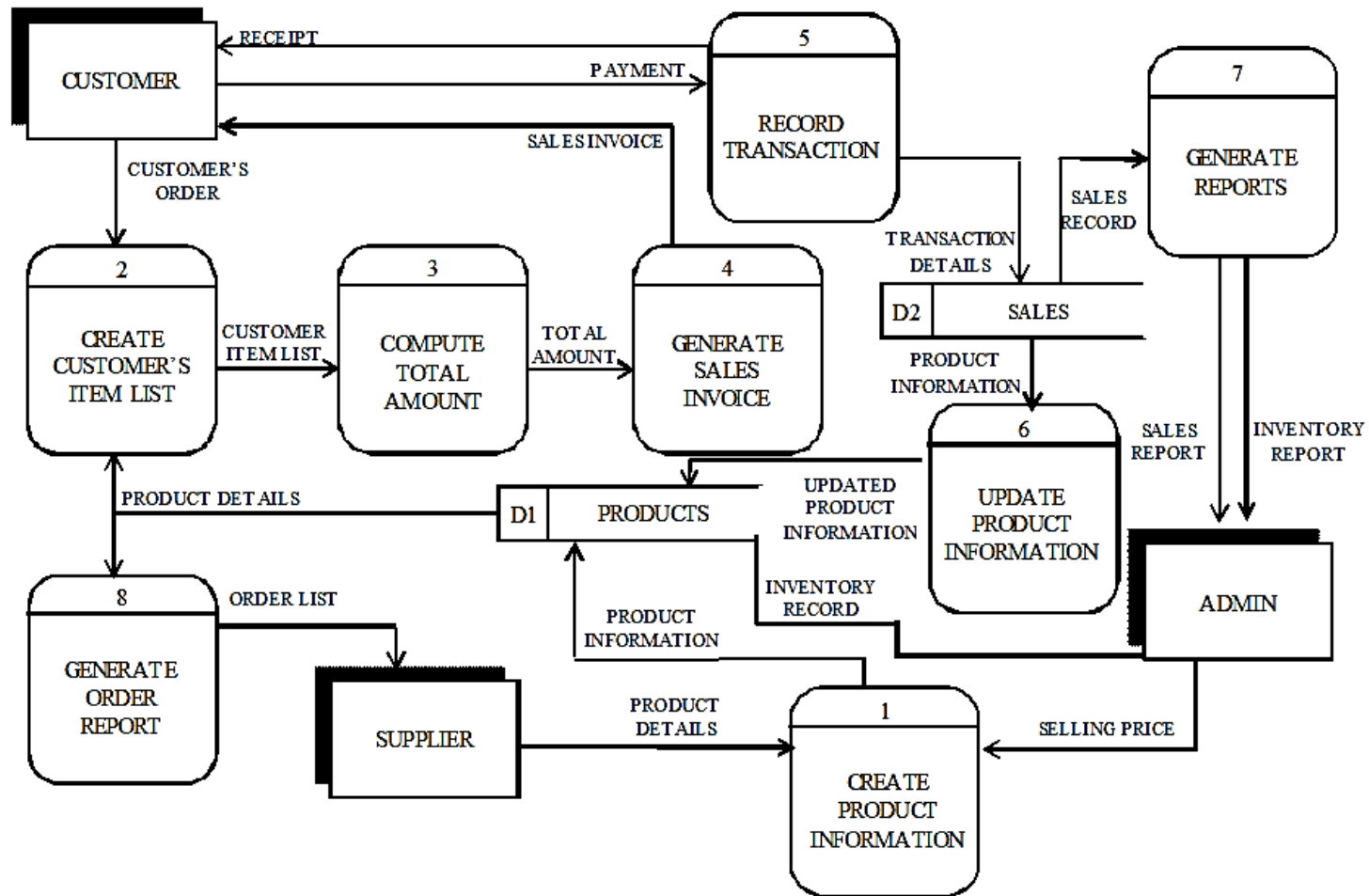
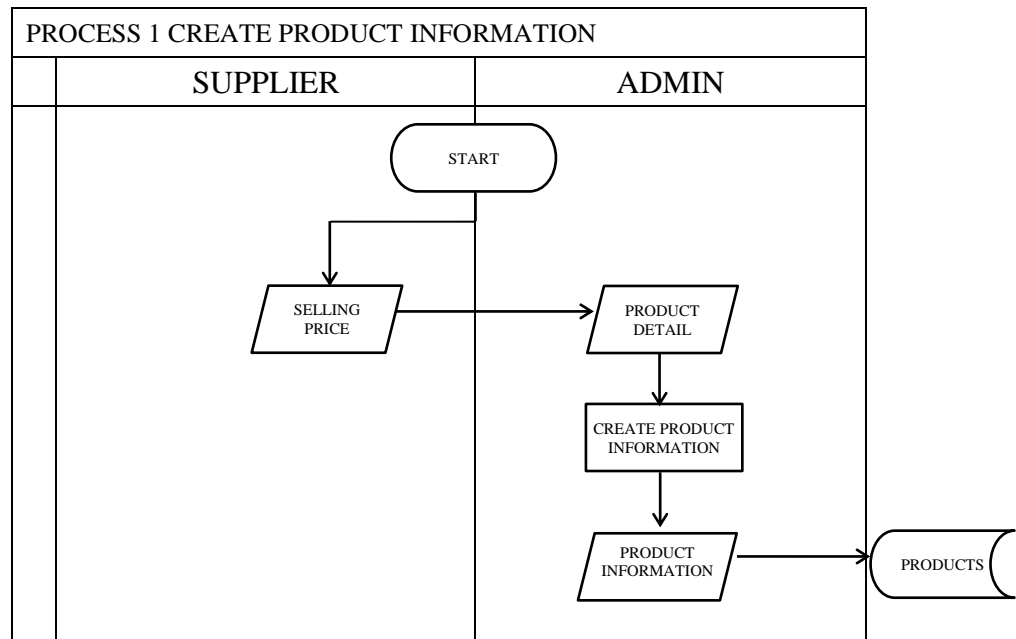


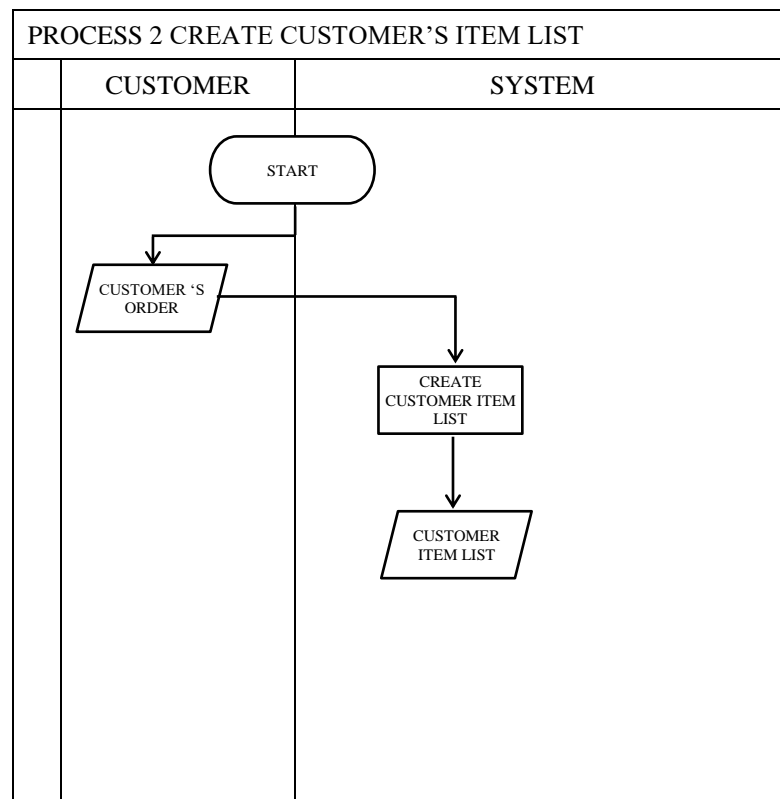
Figure 8

Diagram 0 of New Emrian Sales and Inventory

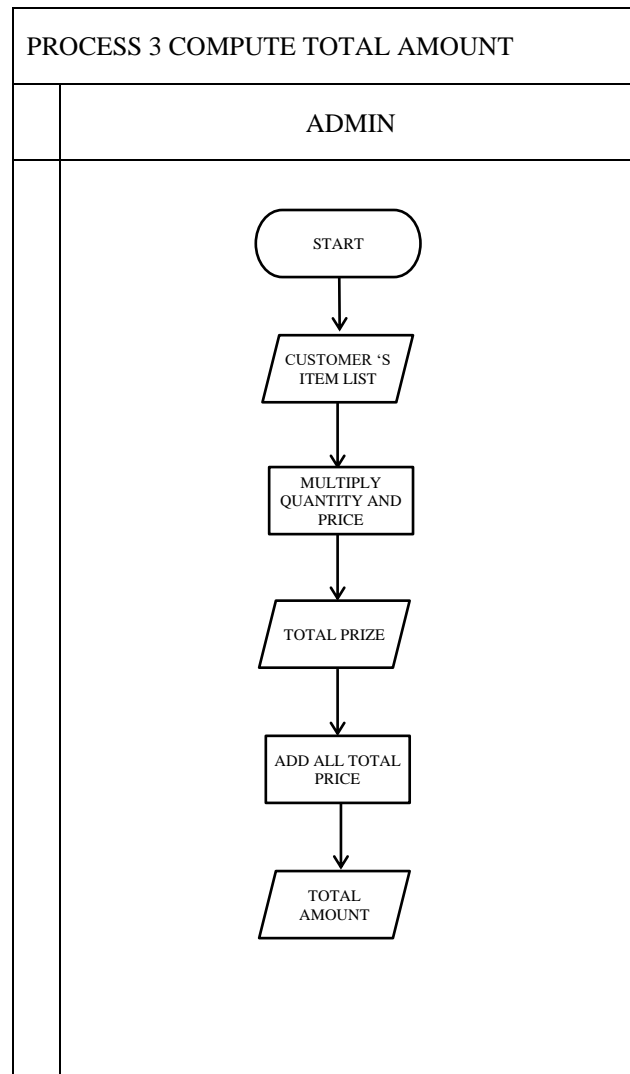
## 1.3 Process Flow Diagram

*Figure 9**Create Product Information*

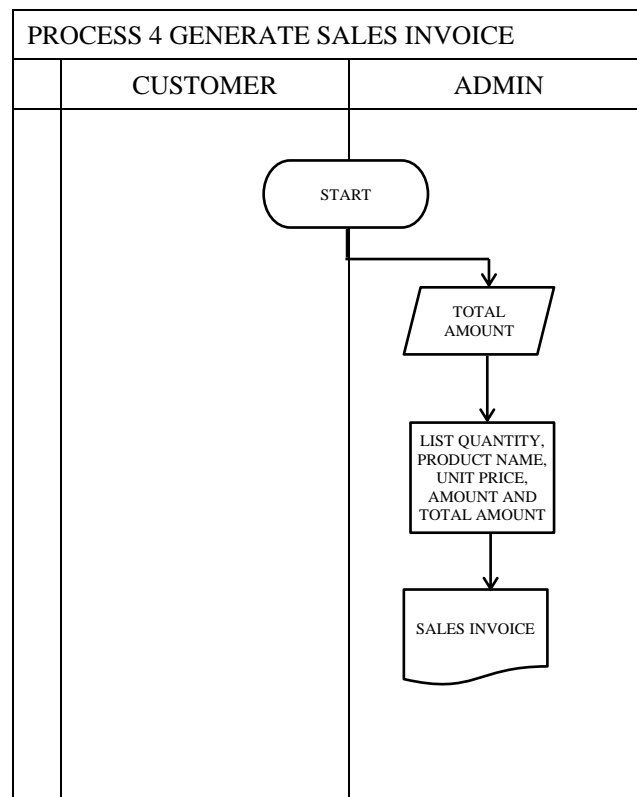




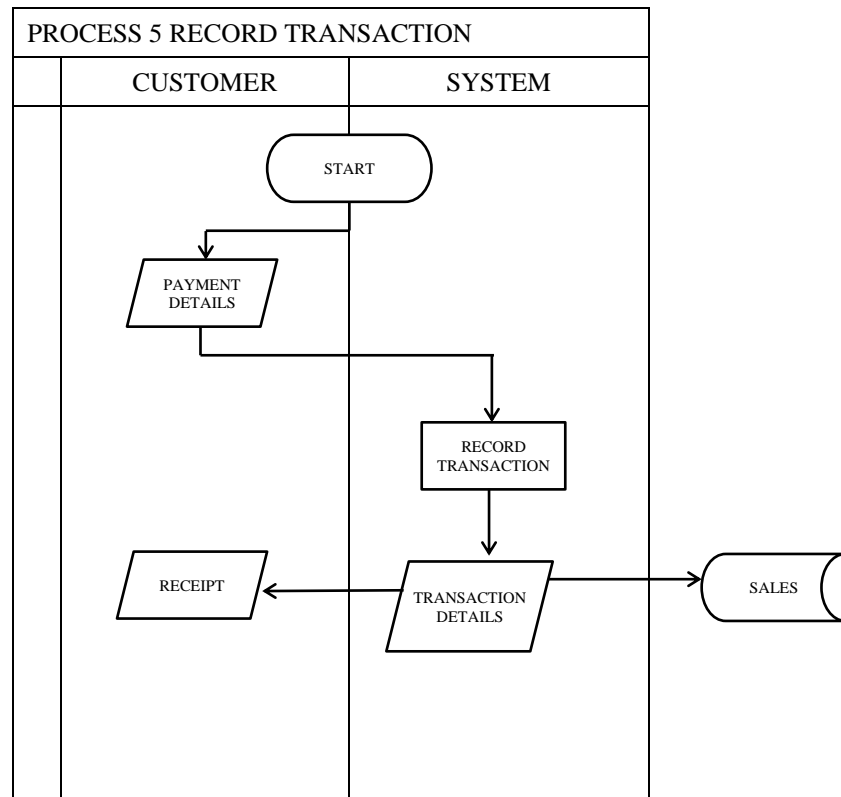
*Figure 10*  
*Create customer's item list*



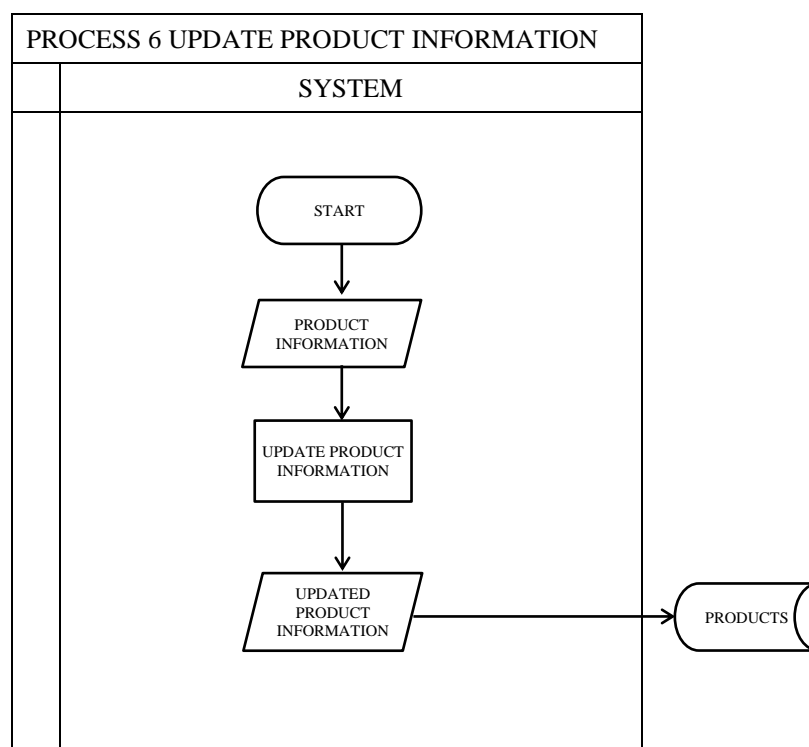
*Figure 11*  
*Compute total amount*



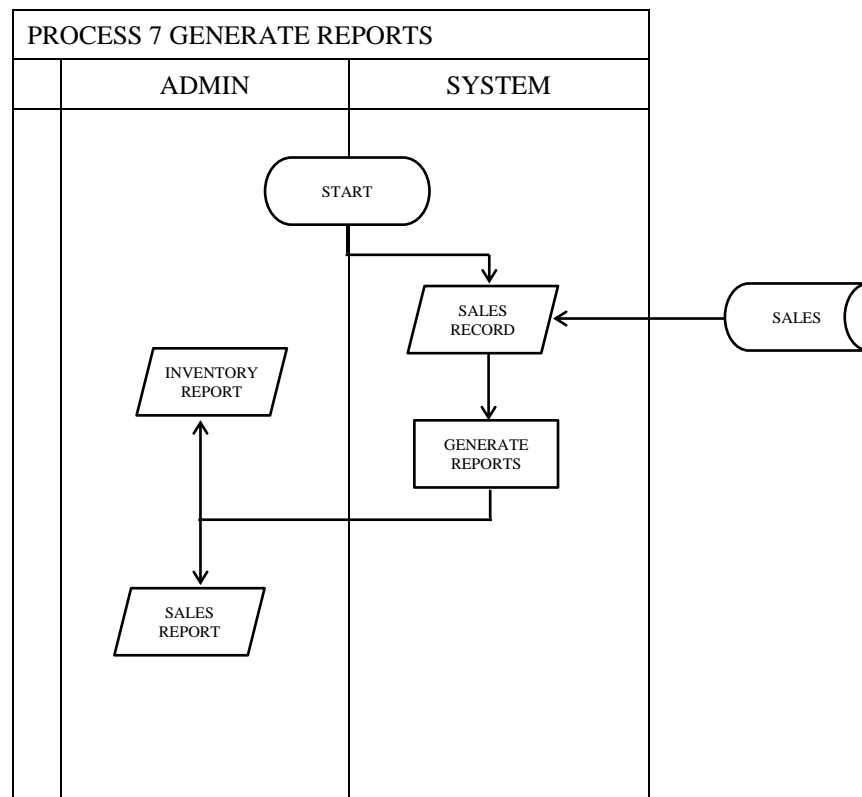
*Figure 12*  
*Generate Sales Invoice*



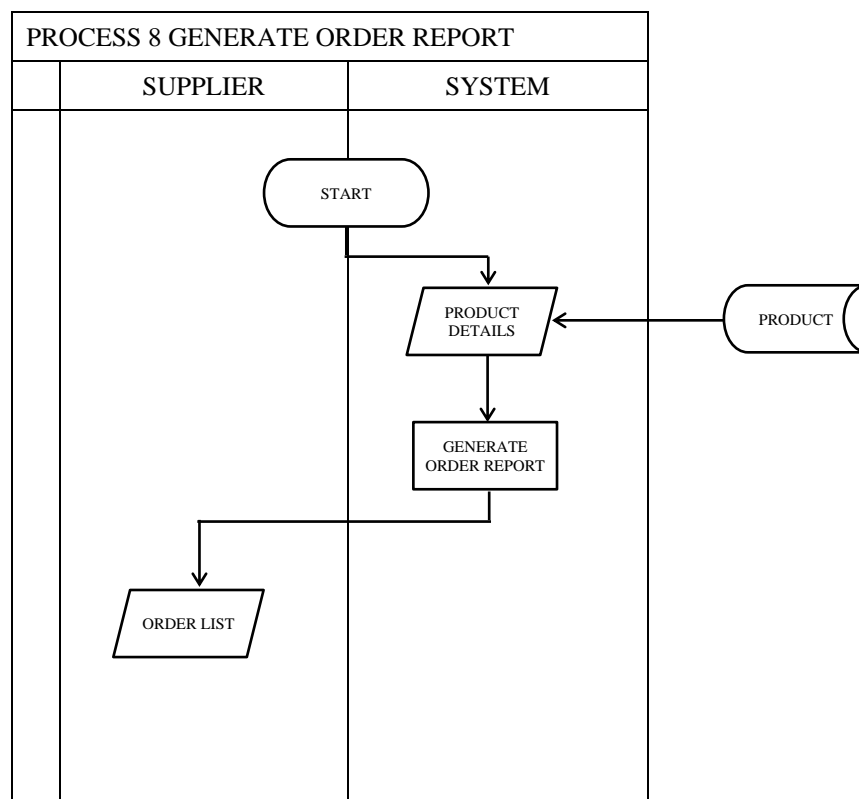
*Figure 13*  
*Record transaction*



*Figure 14*  
*Update product information*



*Figure 15*  
*Generate reports*



*Figure 16*  
*Generate order report*

## **2. Policies**

### **2.1 ORDER PROCESS**

- When client orders, it will be written in a SALES INVOICE. The cashier will check if there are enough products.
- After releasing the products, the SALES INVOICE will be signed by customer.

### **2.2 PAYMENT**

- After checking if the products match with the SALES INVOICE, the customer will issue a payment.
- The cashier will then release a signed RECEIPT.

### **2.3 DELIVERY PROCESS**

- The number of products to be delivered to the client will be based on the SALES INVOICE.
- After receiving the products, a DELIVERY RECEIPT will be issued.

### **2.4 INVENTORY PROCESS**

- Upon using the sales Invoice and Delivery Receipt, the Inventory of stocks will be updated



## D. Problem and Analysis

### 1. Fishbone Diagram

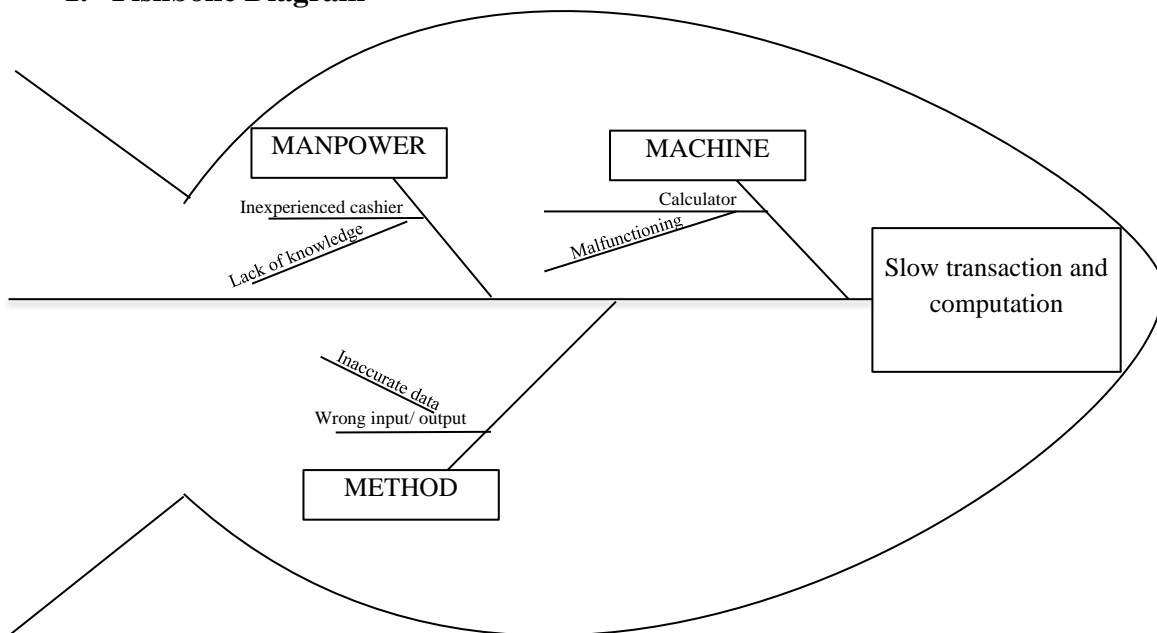


Figure 17

Fishbone Diagram of Problem Number 1

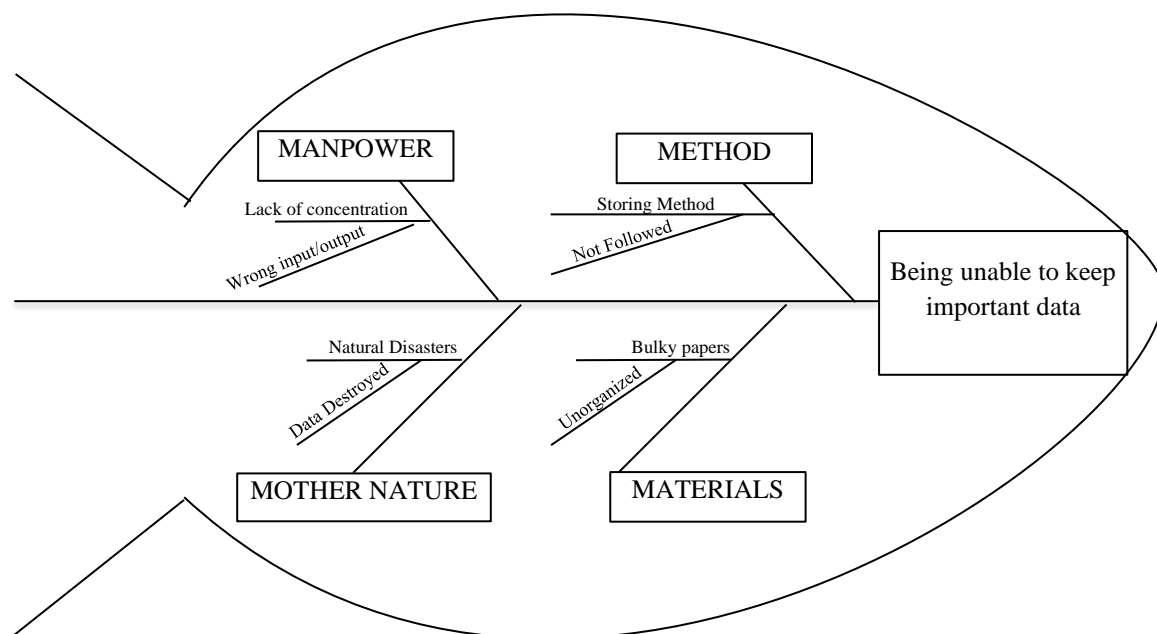
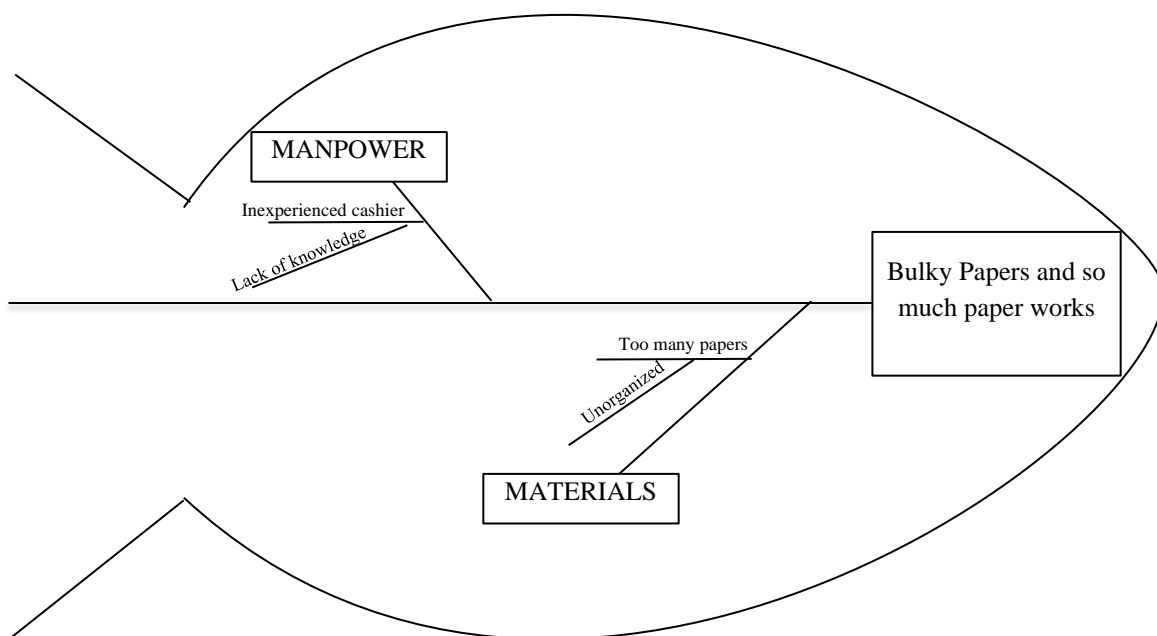
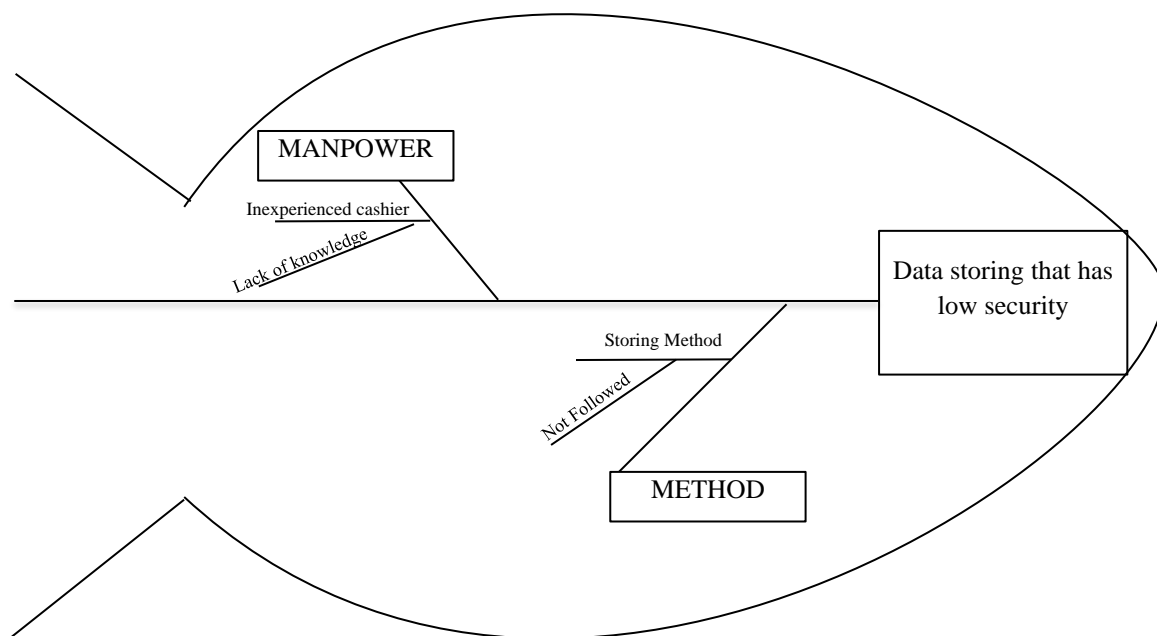


Figure 18

Fishbone Diagram of Problem Number 2



*Figure 19*  
*Fishbone Diagram of Problem Number 3*



*Figure 20*  
*Fishbone Diagram of Problem Number 4*

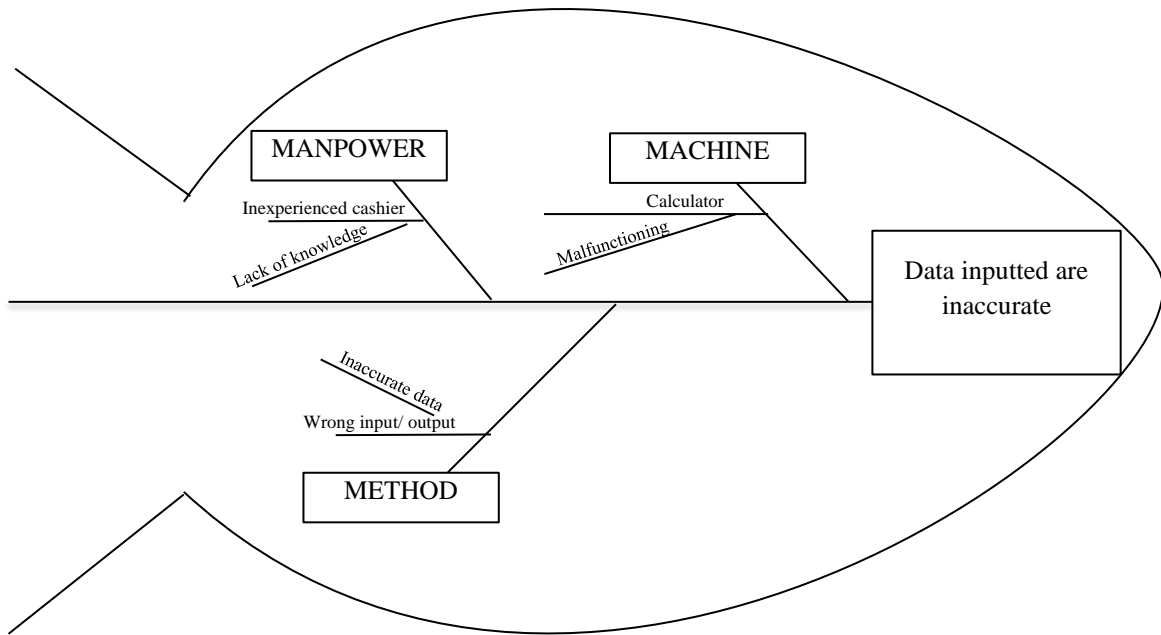


Figure 21

Fishbone Diagram of Problem Number 5

## 2. Problems and Requirements

Ref. Page	No.	Problem	Requirements
6	1	Slow transaction and computations	Speed up transaction
6	2	Being unable to keep important data	Keep track of important records and data
6	3	Bulky paper and so much paper works	Reduce bulky paper works
6	4	Data storing that has low security	Secure stored informations
6	5	Data inputted are inaccurate	Keep accurate data

Table 11

Problems and Requirements



<b>FEAT 8:</b> The software can compute/process transactions and orders									
<b>FEAT 9:</b> The software can release an unofficial receipt									

*Table 12*  
*Requirements-Feature Matrix*

#### **4. Conclusion and Recommendation**

##### **4.1 Conclusion**

New Emrian Hardware is a hardware and construction materials supplier located at Gloria, Oriental Mindoro. They provide materials in constructing buildings, houses and establishments, and home equipment for daily and repair use.

Currently, the company doesn't have an existing computerized system which regards to inventory and sales monitoring hence causing problems not only in accommodating the demands of customers, but also, in the flow of their business processes and transactions.

The company experiences in difficulties regarding the slow transactions and the inability to keep important data because of the business. They are having a hard time to record and save all information for the business because of so much paper works, and are just placed on cabinets and folders. These sometimes cause data inaccuracy and low security.

In order to solve the problems stated, they need to implement a better and more reliable means of storing data and sales and inventory management.

In conclusion, the proposed Sales and Inventory System shall be a great help in handling their business transactions and also deal with the varying needs of the business atmosphere.

##### **4.2 Recommendation**

With regards to conclusions, figures and facts presented, the proponents advise the following recommendations:

For the Admin/Manager:

The proposed system shall be a great help in a faster and accurate transactions and generation of inventory and sales reports.

For the Accountant:

The system shall help in monitoring the proceeds entering the company, proper and correct payment process, and generation of needed reports.

## CHAPTER III

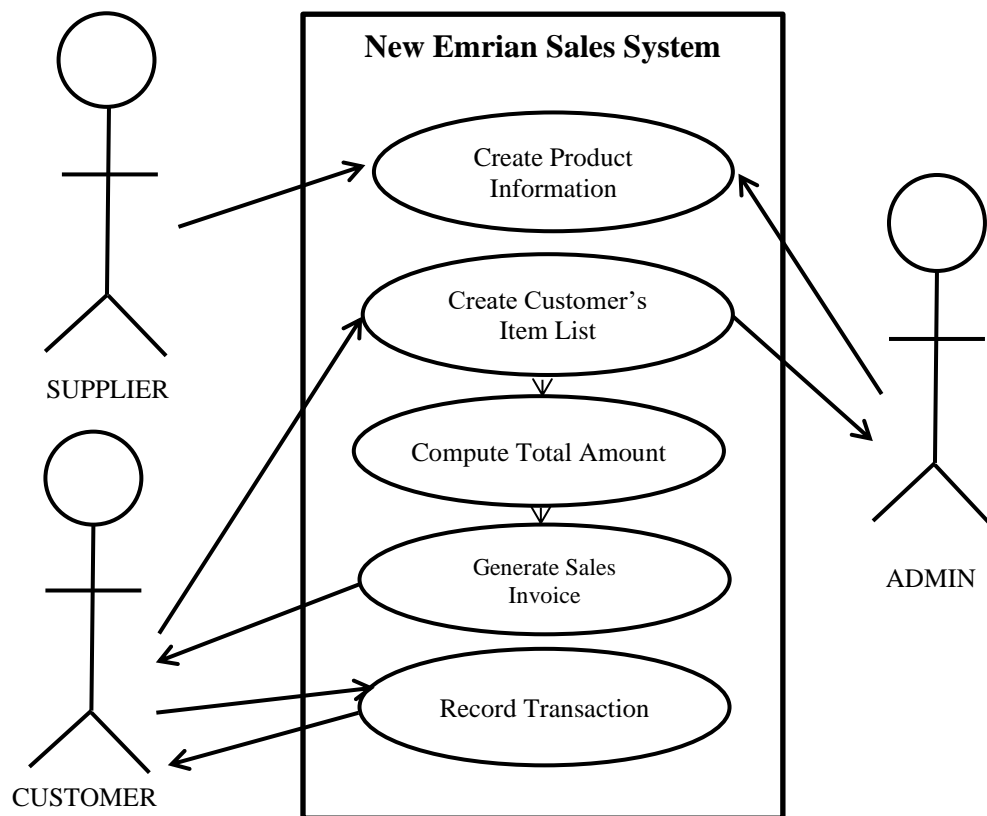
### PROPOSED SYSTEM DEFINITION

#### A. Functional Specification

This shows system frontiers of proposed system through use case diagram, the detailed use case diagram, the activity diagram and the prototype of the system.

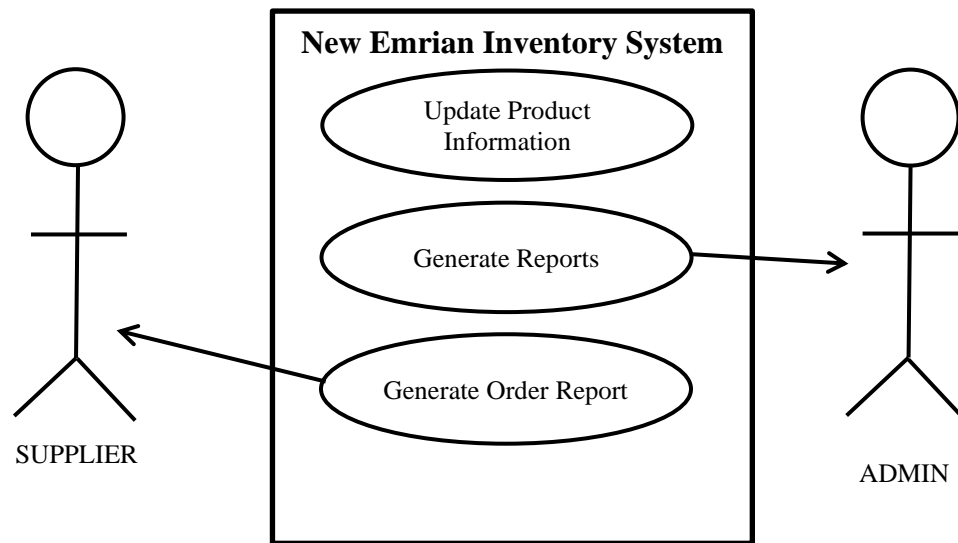
##### 1. System Boundaries

###### 1.1 System USE CASE Diagram



*Figure 22*

*USE CASE Diagram of New Emrian Sales System*



*Figure 23*

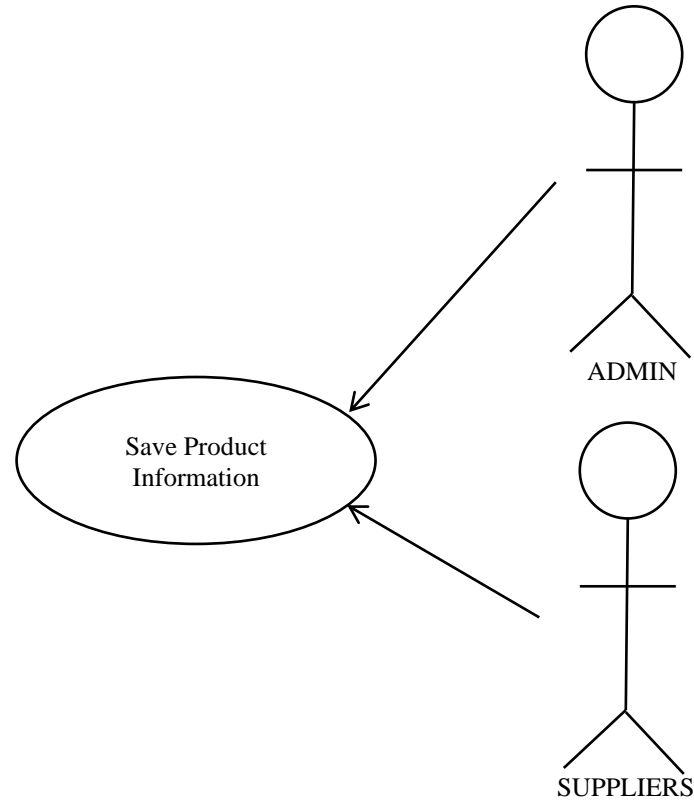
*USE CASE Diagram of New Emrian Inventory System*



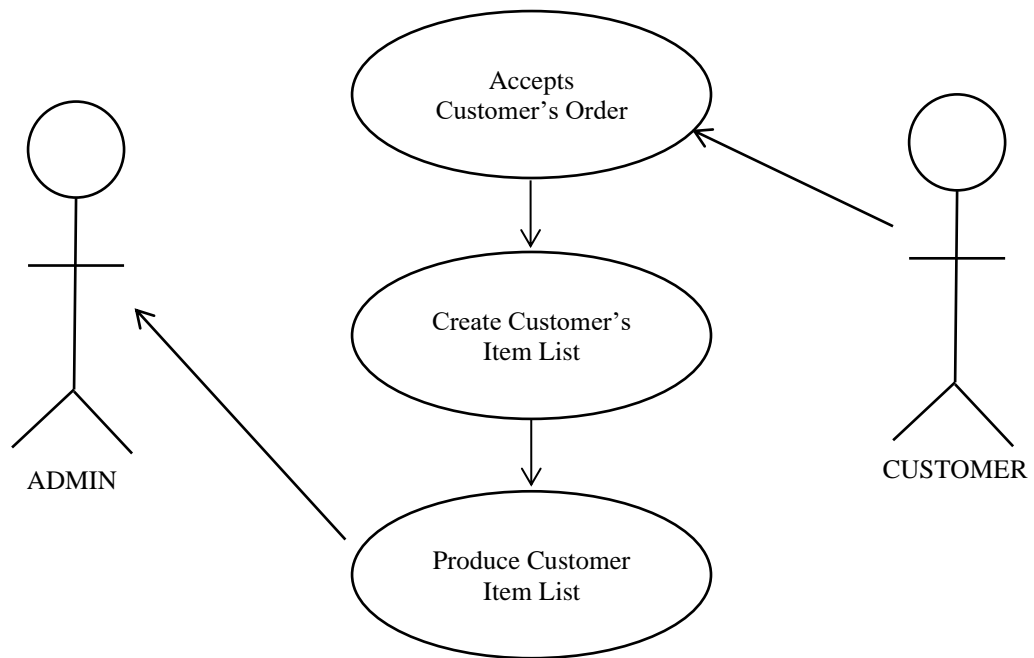
## 1.2 Detailed USE CASE Diagram

**New Emrian Sales System**

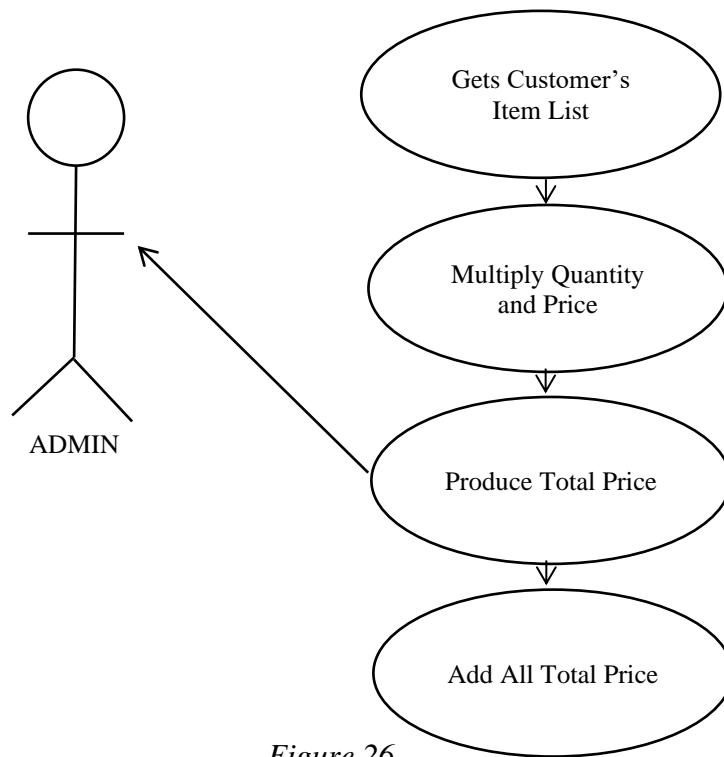
## a. CREATE PRODUCT INFORMATION

*Figure 24**USE CASE Diagram of Create Product Information*

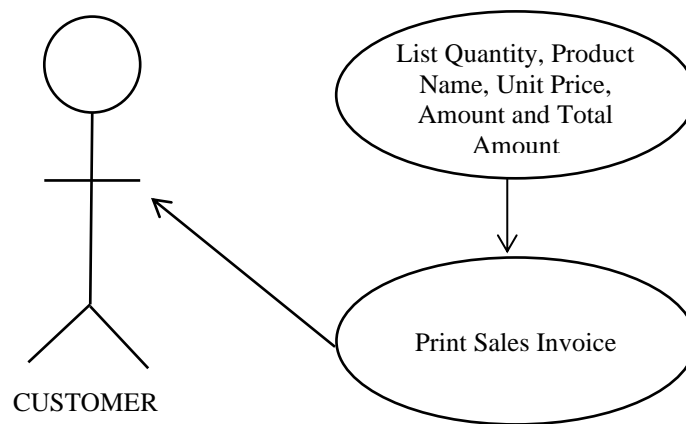
## b. CREATE CUSTOMER'S ITEM LIST

*Figure 25**USE CASE Diagram of Create Customer's Item List*

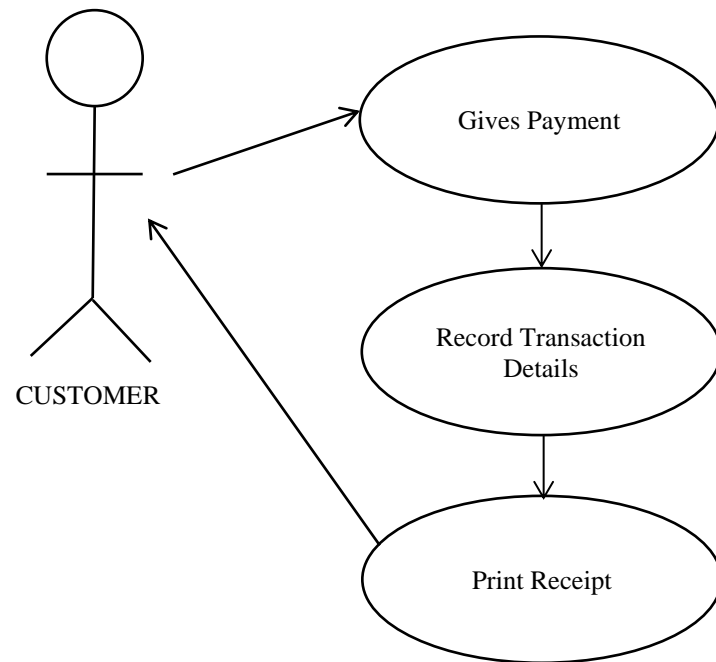
## c. COMPUTE TOTAL AMOUNT

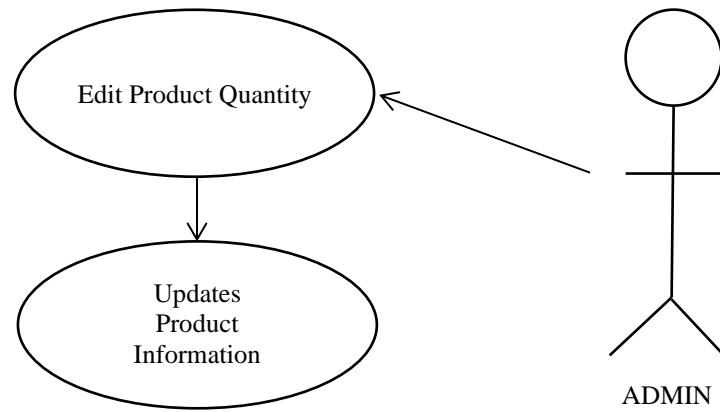
*Figure 26**USE CASE Diagram of Compute Total Amount*

## d. GENERATE SALES INVOICE

*Figure 27**USE CASE Diagram of Generate Sales Invoice*

## e. RECORD TRANSACTION

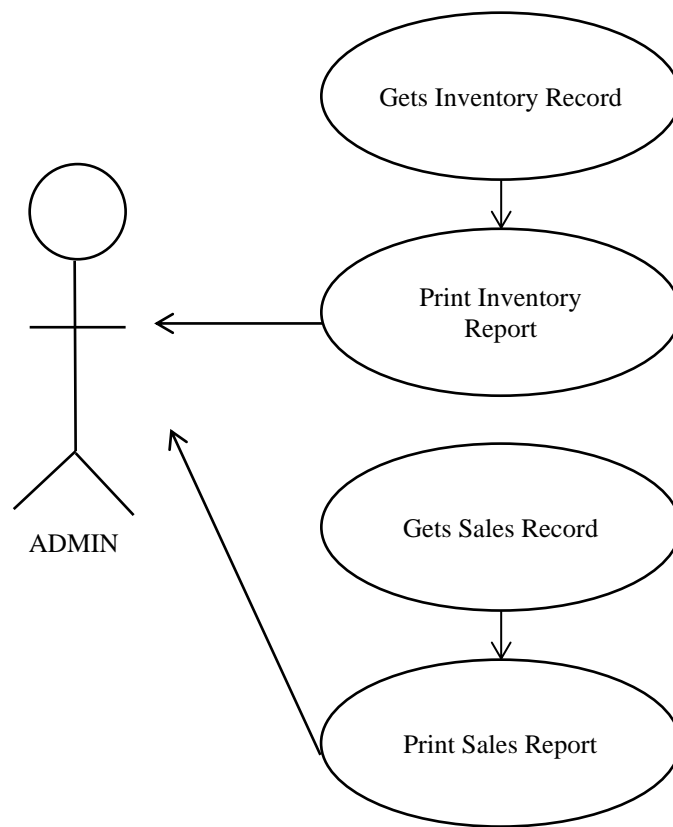
*Figure 28**USE CASE Diagram of Record Transaction*

**New Emrian Inventory System****f. UPDATE PRODUCT INFORMATION**

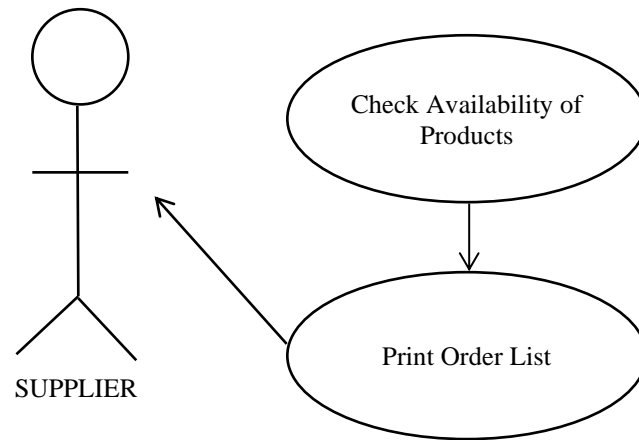
*Figure 29*

*USE CASE Diagram of Update Product Information*

## g. GENERATE REPORTS

*Figure 30**USE CASE Diagram of Generate Reports*

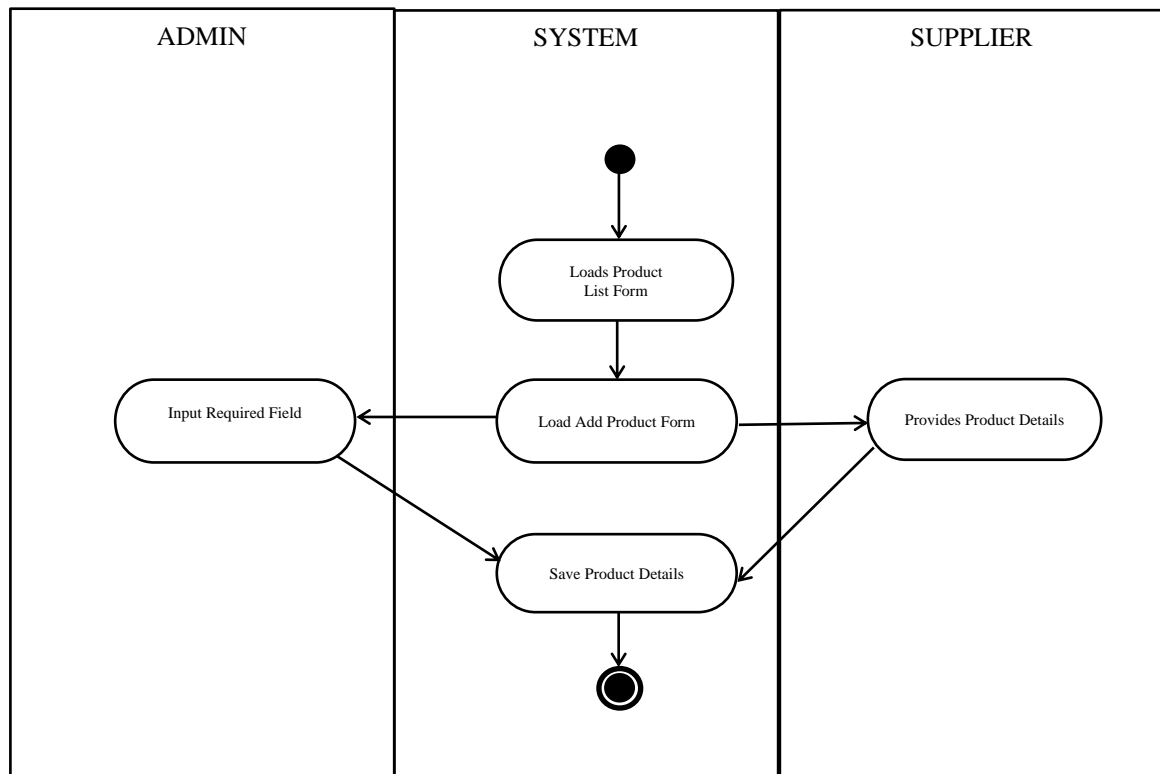
## h. GENERATE ORDER REPORT

*Figure 31**USE CASE Diagram of Generate Order Report*

## 2. System Flow (Activity Diagram Per USE CASE)

### New Emrian Sales System

#### a. CREATE PRODUCT INFORMATION

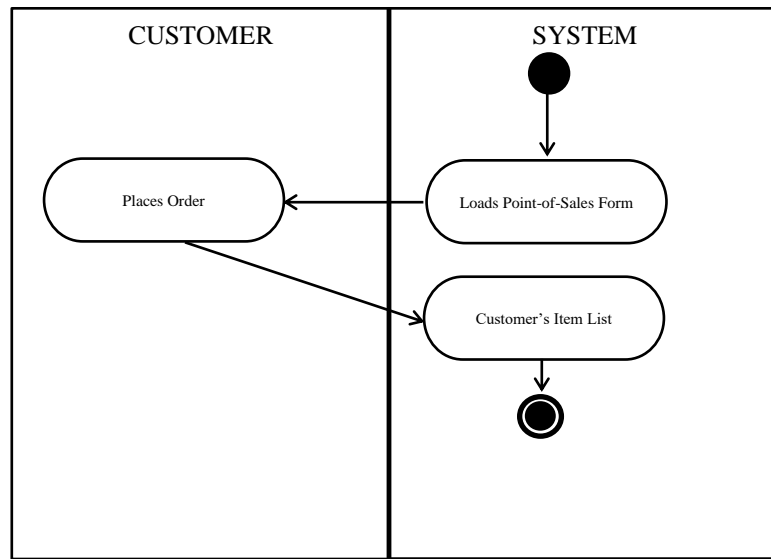


*Figure 32*

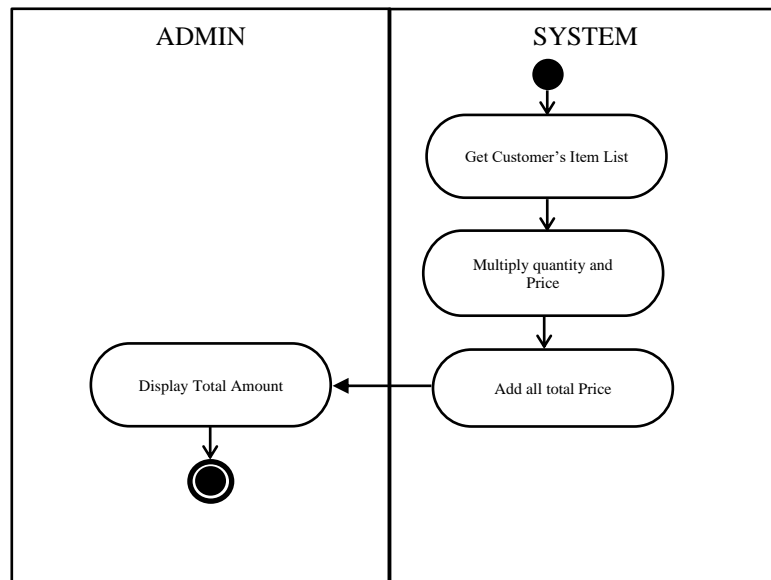
*System Flow of Create Product Information*



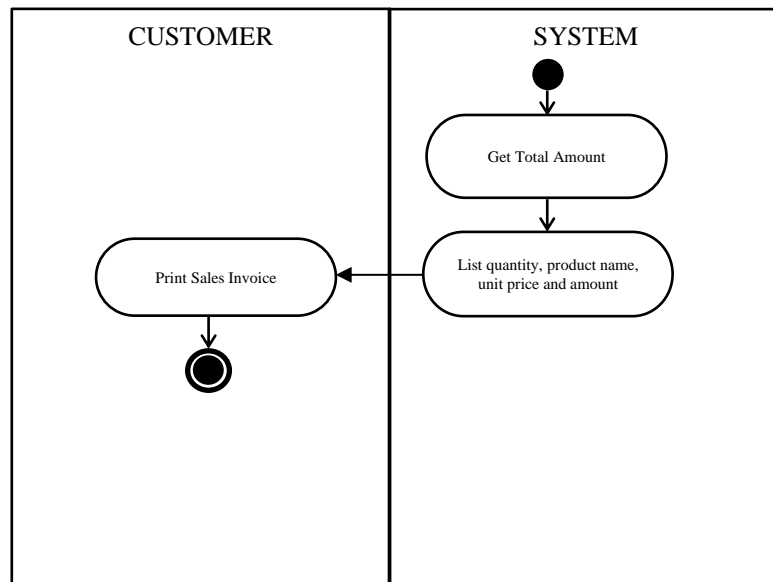
## b. CREATE CUSTOMER'S ITEM LIST

*Figure 33**System Flow of Create Customer's Item List*

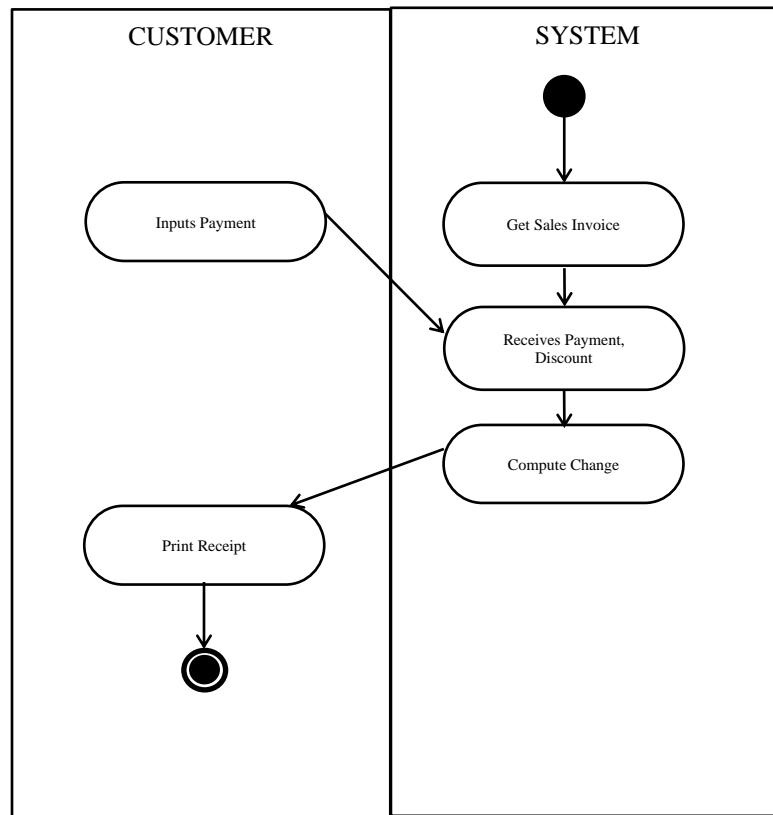
## c. COMPUTE TOTAL AMOUNT

*Figure 34**System Flow of Compute Total Amount*

## d. GENERATE SALES INVOICE

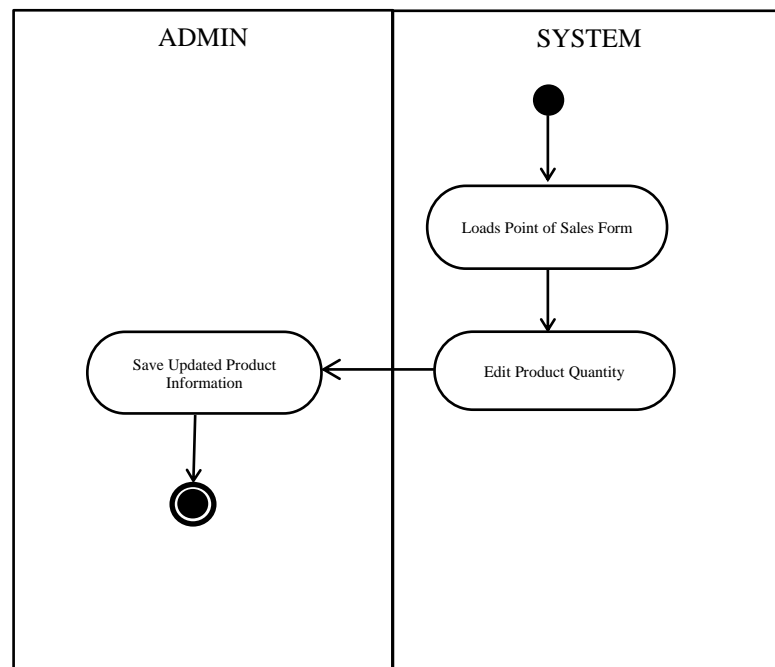
*Figure 35**System Flow of Generate Sales Invoice*

## e. RECORD TRANSACTION

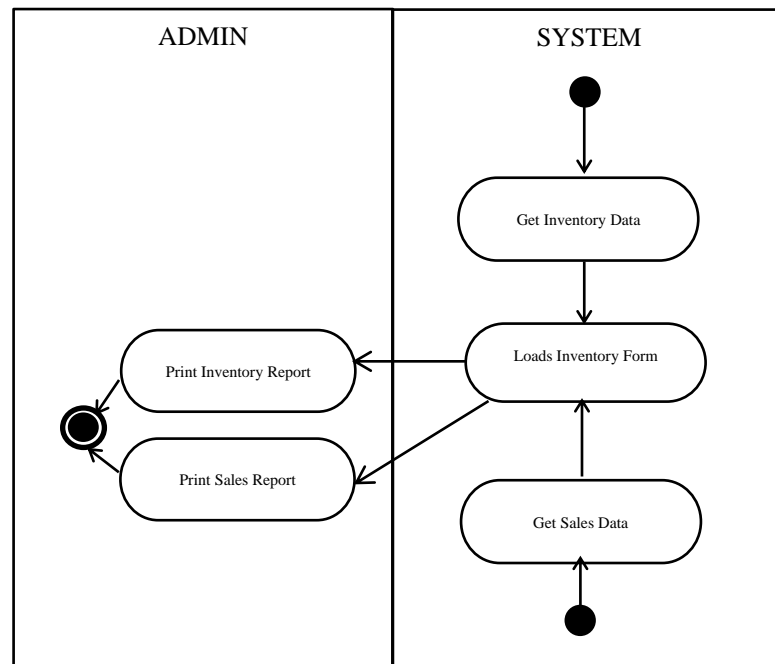
*Figure 36**System Flow of Record Transaction*

**New Emrian Inventory System**

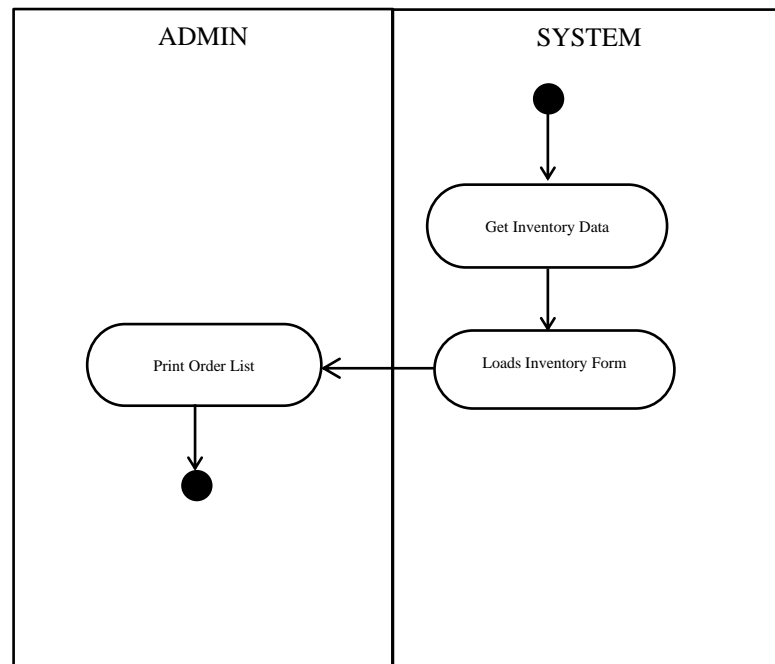
## f. UPDATE PRODUCT INFORMATION

*Figure 37**System Flow of Update Product Information*

## g. GENERATE REPORTS

*Figure 38**System Flow of Generate Reports*

## h. GENERATE ORDER REPORT

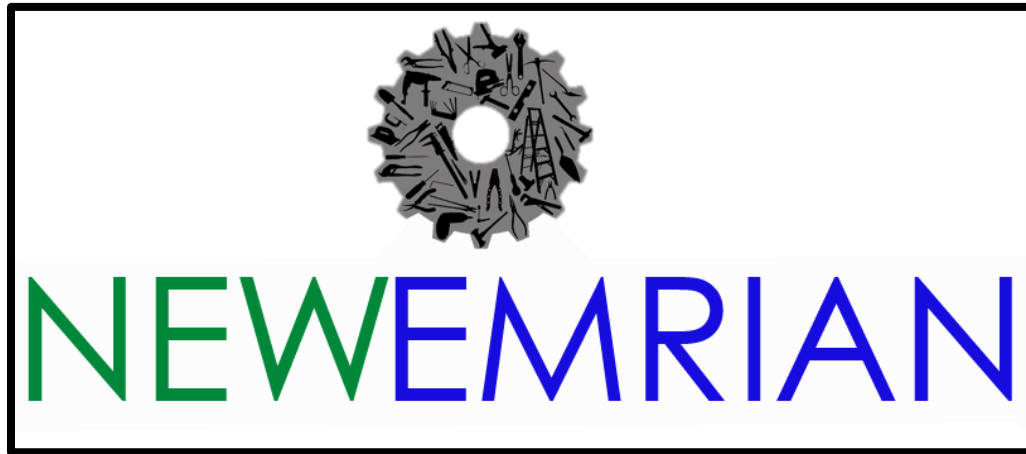
*Figure 39**System Flow of Generate Order Report*

### 3. Prototype

#### a. SCREEN SHOTS

Screen Title: Splash Screen

Description: Splash form. Appears when the program is loading.

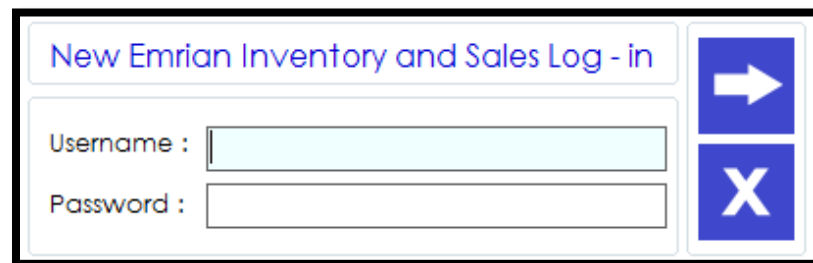


*Figure 40*

*Prototype of Splash Screen*

Screen Title: Log in

Description: Form in which the user inputs the desired username and password to gain access to the system.

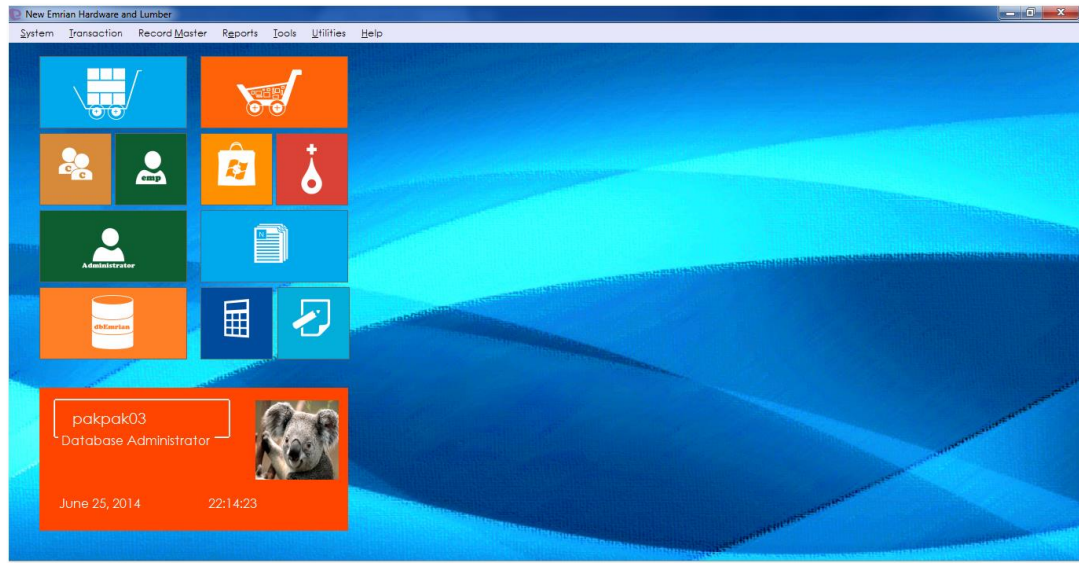
The image shows a prototype of a login form. It has a white background with a black border. At the top, the text "New Emrian Inventory and Sales Log - in" is written in blue. Below this, there are two input fields: "Username :" and "Password :". To the right of these fields are two blue buttons: the top one has a white right-pointing arrow, and the bottom one has a white 'X'.

*Figure 41*

*Prototype of Log in*

Screen Title: Main Menu

Description: Form in which the main transaction is happening. It shows the features the system provides.




*Figure 42*  
*Prototype of Main Menu*



Screen Title: Add User Account

Description: Form in which users are created.



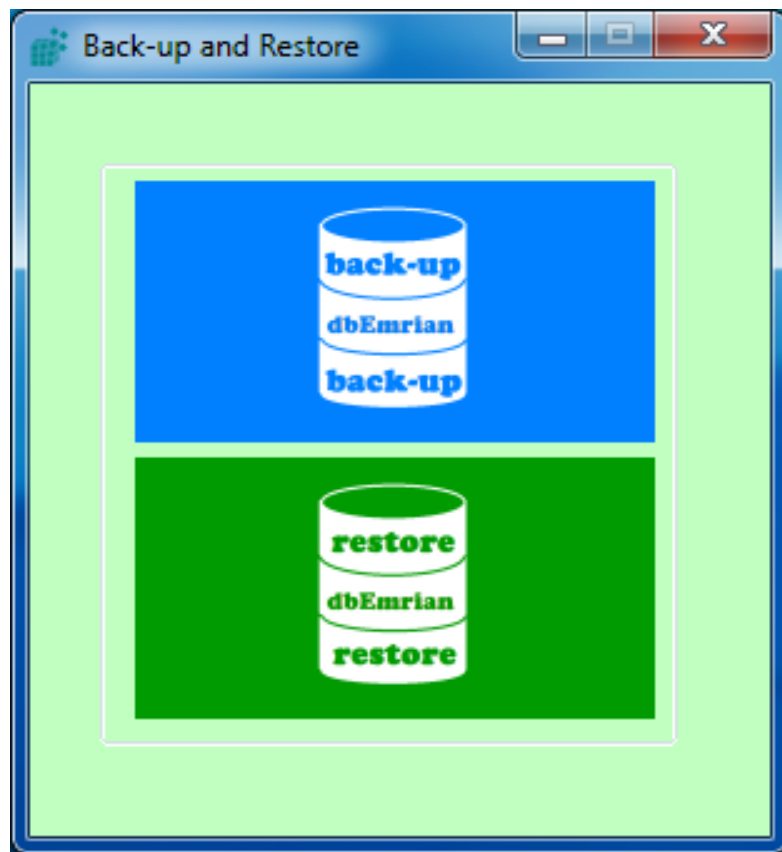
The image shows a software window titled "Add User Account". Inside the window, there is a light blue background. At the top center, there is a square icon with a white smiley face on a dark blue background. Below this icon, there is a white rectangular box containing five input fields. The first four are text boxes labeled "Employee ID:", "UserName:", "Password:", and "Verify Password:". The fifth is a dropdown menu labeled "Position:". Below the white box, there are two red square buttons with white symbols: a plus sign (+) and a multiplication sign (X).

*Figure 43*

*Prototype of Add User Account*

Screen Title: Backup and Restore

Description: Form in which back up and restoration of database is done.



*Figure 44*

*Prototype of Backup and Restore*

Screen Title: Customers

Description: Form in which customers' data are shown.

CustomerID	CompanyName	FName	MName
1	Century Gothic	Jane Ann	Untalan
9	Lorem Ipsum	Jane Ann	Untalan
10	Lorem Ipsum	Ezekiel	Bico
11	Century Gothic	Rajick Van	Mabungo
13	Random	Random	Random
14	asdf	asdf	asdf
15	sdf	sd	sdfg
16	asd	asd	asdf
17	Kumpanyero	Juan	Abad

*Figure 45*

*Prototype of Customers*

Screen Title: Add Customers

Description: Form in which customers' record are created.



Add Customers

Company Name :

First Name :

Middle Name :

Last Name :

Street :

City/Town :

State/Province :

Postal Code :

Country/Region :

Contact No :

Email :

*Figure 46*

*Prototype of Add Customers*

Screen Title: Edit Customers

Description: Form in which customers' records are edited.



The image shows a software prototype for an 'Edit Customers' screen. The window has a light blue title bar with the text 'Edit Customers' and standard window controls. The main area has a light blue background. At the top center is a dark blue square containing a white smiley face icon. Below this is a form with the following fields, each with a label and a text input box: 'Company Name', 'First Name', 'Middle Name', 'Last Name', 'Street', 'City/Town', 'State/Province', 'Postal Code', 'Country/Region', 'Contact No' (with a dashed line indicating a masked field), and 'Email'. At the bottom of the form area are two red square buttons: one with a white plus sign and one with a white 'x' sign.

*Figure 47*

*Prototype of Edit Customers*

Screen Title: Employees

Description: Form in which employees' records are edited.

EmployeeID	FName	MName	LName
13	Jane Ann	Untalan	Ilagan
14	Ezekiel	Bico	Rubio
15	Hiddcel	M.	Cornejo
16	melgrace	aceveda	majaba
17	Rajick Van	Mabunga	Corpuz
18	dfgaafd	adfga	dfg
19	Juan	Abad	Dela Cruz

*Figure 48*

*Prototype of Employees*

Screen Title: Add Employees

Description: Form in which employees' records are created.

Add Employees

First Name :

Middle Name :

Last Name :

Street :

City/Town :

State/Province :

Postal Code :

Country/Region :

Status :

Date Hired : 2014-06-25

*Figure 49*

*Prototype of Add Employees*

Screen Title: Edit Employees

Description: Form in which employees' record are edited.

*Figure 50*

*Prototype of Edit Employees*



Screen Title: Suppliers


Description: Form in which suppliers' data are shown.

SupplierID	CompanyName	FName	MName
2	Century Gothic	Jane Ann	Untalan
3	Lorem Ipsum	Mark Andro	Landicho
4	Lorem Ipsum	Melgrace	Aceveda
5	KYUT	etyu	KJKGC
6	Kumpanyera	Juana	Abad
7	Kumpare	Juano	Abad

*Figure 51*  
*Prototype of Suppliers*

Screen Title: Add Suppliers

Description: Form in which suppliers' data are created.



Company Name :

First Name :

Middle Name :

Last Name :

Street :

City/Town :

State/Province :

Postal Code :

Country/Region :

Contact No :

Email :

*Figure 52*  
*Prototype of Add Suppliers*

Screen Title: Edit Suppliers

Description: Form in which suppliers' data are edited.



The image shows a software prototype for an 'Edit Suppliers' window. The window has a light blue background and a title bar with the text 'Edit Suppliers'. At the top center is a dark blue square containing a white icon of a face with a dollar sign for a mouth. Below this is a form with the following fields, each with a label and a text input box: 'Company Name', 'First Name', 'Middle Name', 'Last Name', 'Street', 'City/Town', 'State/Province', 'Postal Code', 'Country/Region', 'Contact No' (with a dashed line indicating a masked field), and 'Email'. At the bottom of the form are two red square buttons: the left one contains a white plus sign (+) and the right one contains a white minus sign (-).

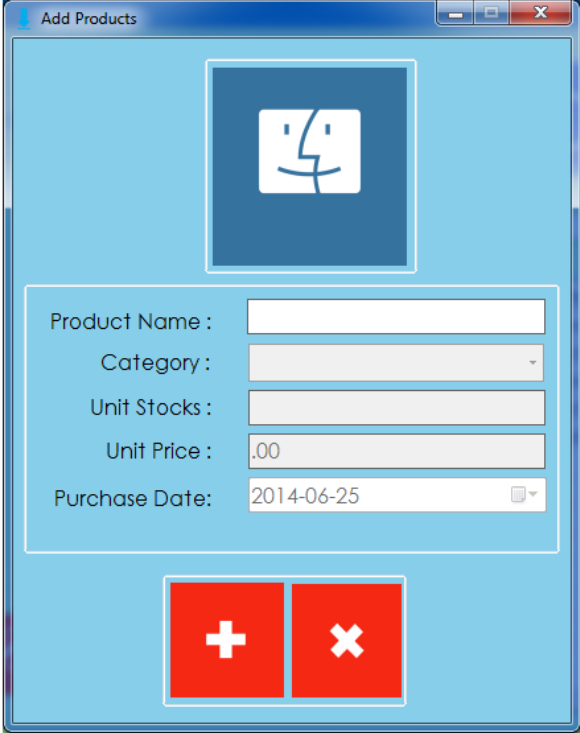
*Figure 53*

*Prototype of Edit Suppliers*



Screen Title: Add Products

Description: Form in which products' data are created.

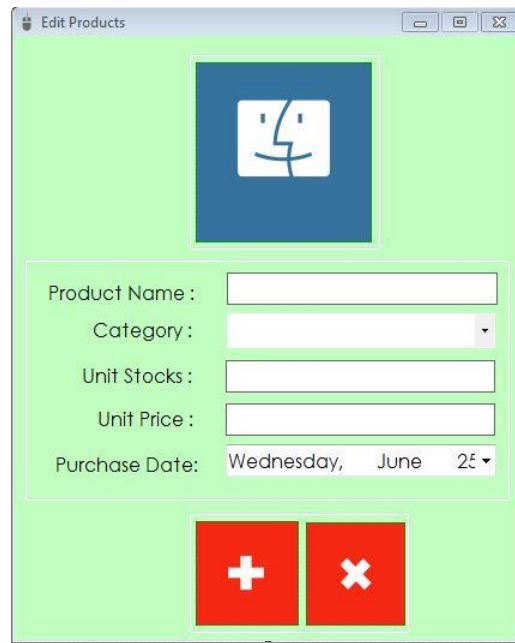


The image shows a software window titled "Add Products". The window has a light blue background. At the top center, there is a dark blue square containing a white stylized face icon. Below this, there is a white rectangular area containing five input fields: "Product Name" (text box), "Category" (dropdown menu), "Unit Stocks" (text box), "Unit Price" (text box with ".00" entered), and "Purchase Date" (calendar icon and "2014-06-25" entered). At the bottom center, there are two red square buttons with white symbols: a plus sign (+) and a minus sign (-).

*Figure 55*  
*Prototype of Add Products*

Screen Title: Edit Products

Description: Form in which products' data are edited.



Edit Products

Product Name :

Category :

Unit Stocks :

Unit Price :

Purchase Date: Wednesday, June 25

*Figure 56*

*Prototype of Edit Products*

*Figure 57*  
*Prototype of Point of Sales*

Screen Title: Products' Inventory

Description: Form in which inventory for products are shown.

The screenshot shows a window titled 'Inventory'. At the top, there is a dropdown menu set to 'Daily' and a date field showing '2014-06-25'. Below this is a table with the following columns: InvoiceNo, ProductName, Quantity, Price, and PurchasedDate. The table contains 19 rows of data. To the right of the table is a sidebar with two radio buttons: 'Products Inventory' (selected) and 'Sales Inventory'. Below these is a search bar with a magnifying glass icon. Under the search bar is a filter dropdown set to 'InvoiceNo'. At the bottom of the sidebar, it displays 'Total Products: 281' and 'Total Records: 19'.

InvoiceNo	ProductName	Quantity	Price	PurchasedDate
1	Boysen Paint	1	150.00	2014-03-21
1	Boysen Paint	1	150.00	2014-03-21
1	Boysen Paint	1	150.00	2014-03-21
98	Grout	1	15.00	2014-03-21
99	Boysen Paint	1	150.00	2014-03-21
100	Rain or Shine	1	150.00	2014-03-21
100	Boysen Paint	1	150.00	2014-03-21
100	Grout	1	15.00	2014-03-21
101	Boysen Paint	1	150.00	2014-03-21
101	Boysen Paint	2	300.00	2014-03-21
101	Grout	120	1800.00	2014-03-21
101	Grout	20	300.00	2014-03-21
102	Rain or Shine	1	150.00	2014-03-22

Products Inventory  
Sales Inventory

Filter: InvoiceNo

Total Products: **281**  
Total Records: **19**

Figure 58

Prototype Products' Inventory



Screen Title: Sales' Inventory

Description: Form in which sales are shown.

Customer Name	Invoice No	Total Price	Date
Century Gothic	89	150.00	2014-03-20
Lorem Ipsum	90	15.00	2014-03-20
Century Gothic	91	150.00	2014-03-21
Century Gothic	92	150.00	2014-03-21
Century Gothic	93	150.00	2014-03-21
Century Gothic	94	150.00	2014-03-21
Century Gothic	95	150.00	2014-03-21
Century Gothic	96	150.00	2014-03-21
Century Gothic	97	15.00	2014-03-21
Lorem Ipsum	98	150.00	2014-03-21
Century Gothic	99	315.00	2014-03-21
Century Gothic	100	450.00	2014-03-21
Centurv Gothic	101	2100.00	2014-03-21

☐ Products Inventory  
☒ Sales Inventory

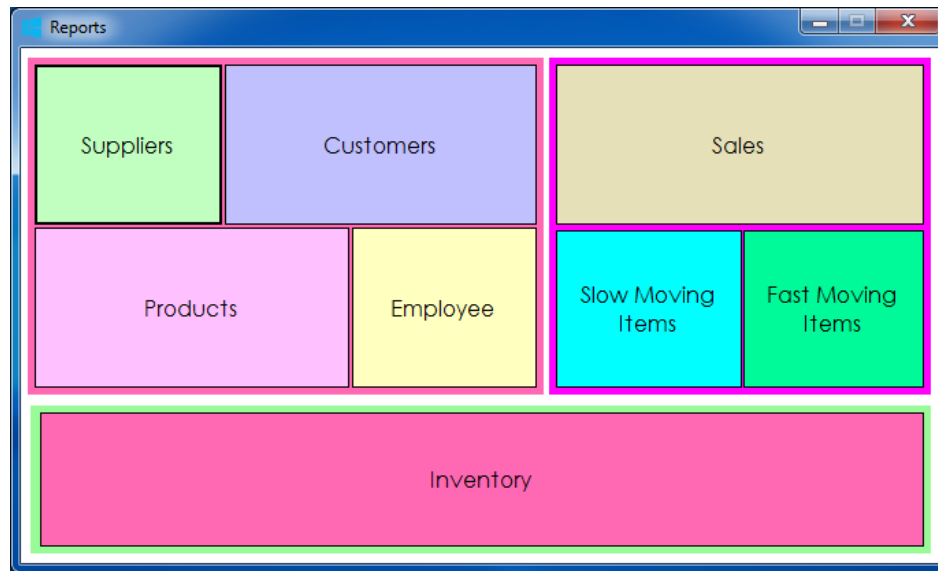
Filter:  CompanyName

Total Amount : **23545.00**  
 Total Records : **18**

*Figure 59*  
*Prototype Sales' Inventory*

Screen Title: Reports

Description: Form in which buttons for MS Excel exportation of reports are shown.



*Figure 60*  
*Prototype of Reports*

## **B. Technical Specification**

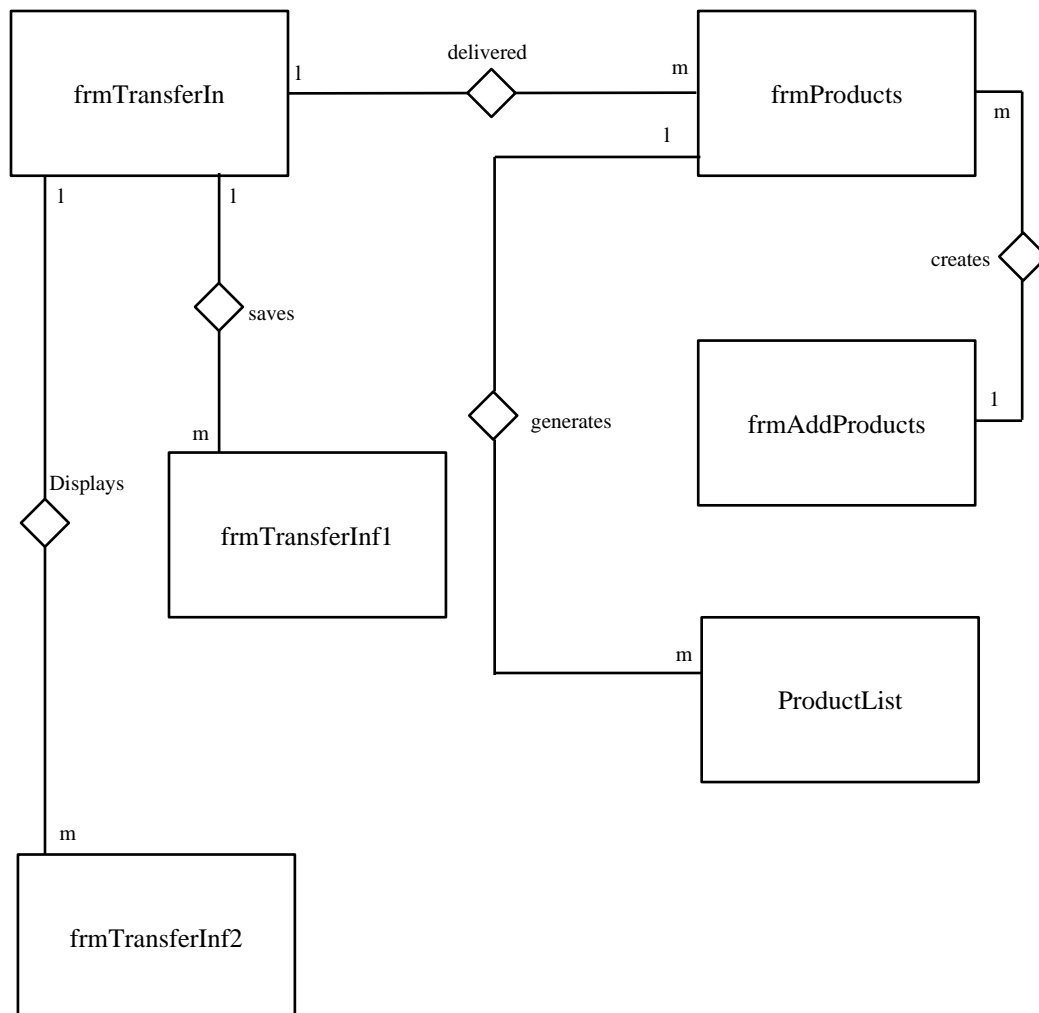
This section identifies the design of different technical components used in Sales and Inventory System from database to report forms.

### **1. Domain Object Modeling**

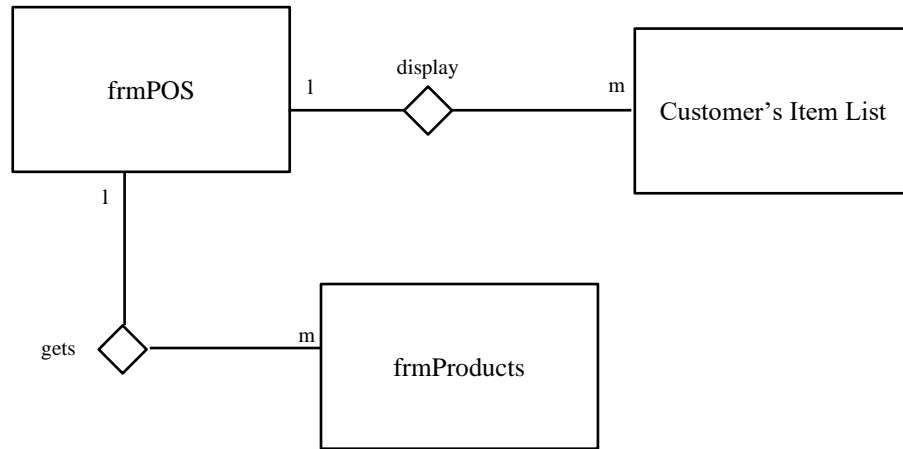
#### **1.1 List of Classes**

- frmAddProducts
- frmAddSuppliers
- frmBackup
- frmCategory
- frmChangePassword
- frmInventory
- frmLogIn
- frmLogs
- frmMMenu
- frmOrderForm
- frmPOS
- frmProducts
- frmSettings
- frmSuppliers
- frmTransferIn
- frmTransferInf1
- frmTransferInf2
- frmUpdateRetail
- frmUserAccounts

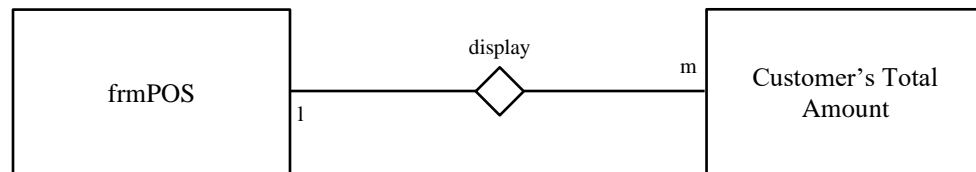
## 1.2 Class Diagrams (Per USE CASE by System)

**New Emrian Sales System**

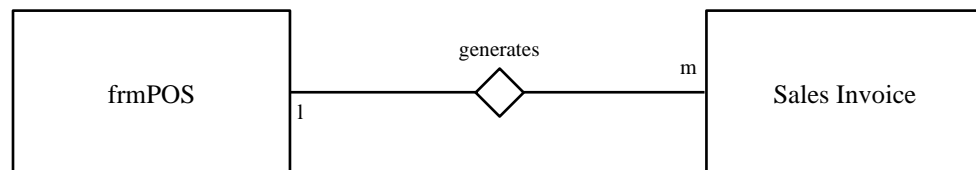
*Figure 61*  
*Create Product Information*



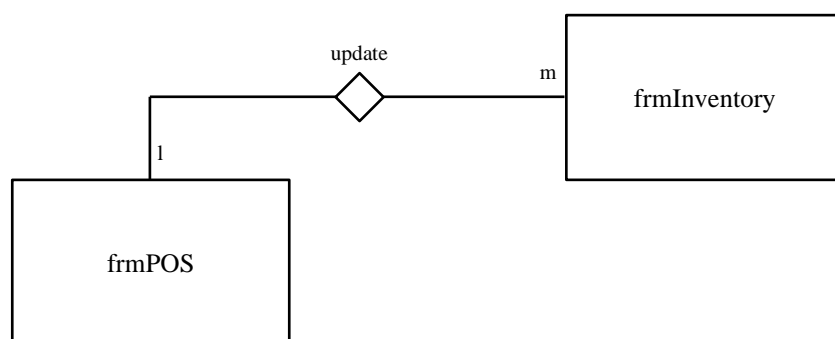
*Figure 62*  
*Create Customer's Item List*



*Figure 63*  
*Compute Total Amount*

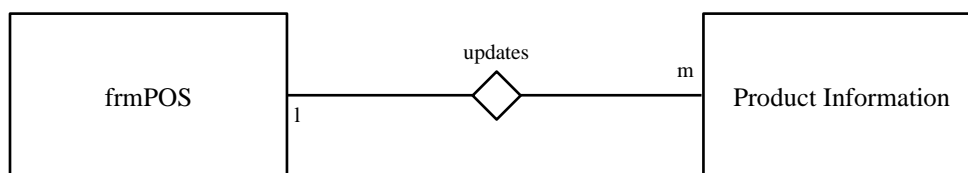


*Figure 64*  
*Process 4 Generate Sales Invoice*

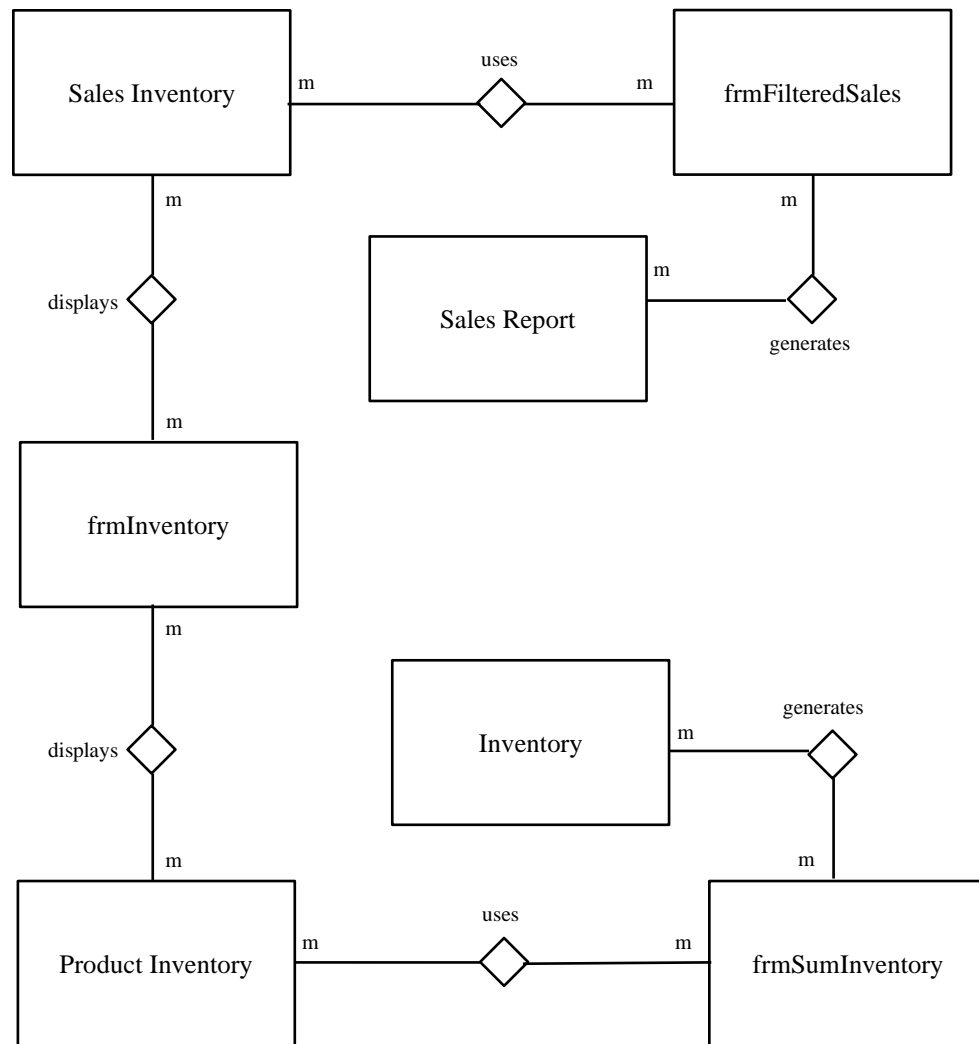


*Figure 65*  
*Record Transaction*

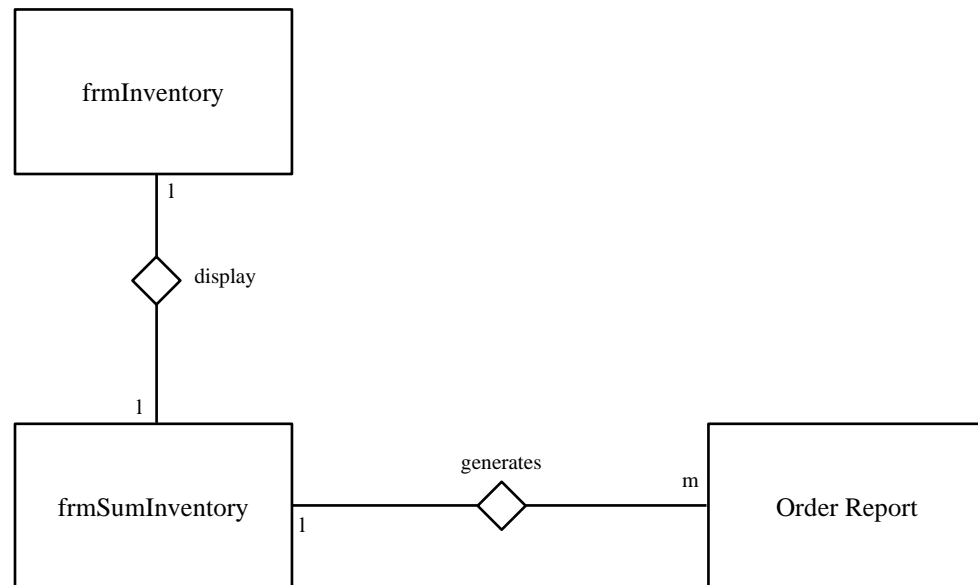
### **New Emrian Inventory System**



*Figure 66*  
*Update Product Information*



*Figure 67*  
*Generate Reports*



*Figure 68*  
*Generate Order Report*



## 2. Database Design

### 2.1 Database Schema

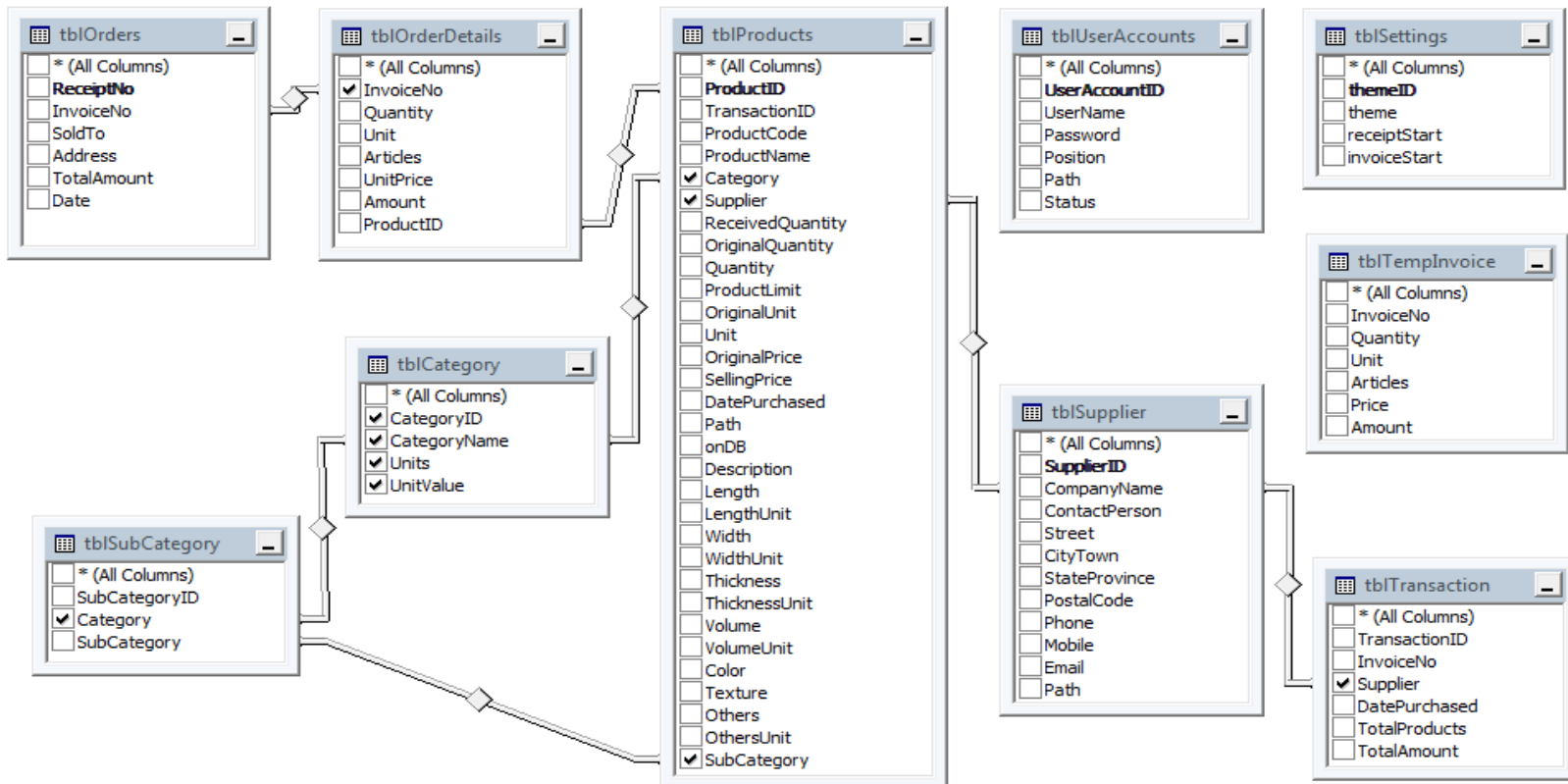


Figure 69

Database Schema of  
New Emrian Sales and Inventory System

## 2.2 Data Dictionary

<b>Table Name: tblCategory</b> <b>Table Description: This table includes information about the category of the products.</b> <b>Related Tables: tblProducts</b>					
ID	Data Element	Description	Data Type	Length	Sample Data
PK	CategoryID	Categories' identification	int	6	112
	CategoryName	Name of the category	varchar	50	nails
	Units	Unit of the product	varchar	20	pcs
	UnitValue	Unit value of measurement	varchar	50	Length

*Table 13*  
*tblCategory Table*

<b>Table Name: tblOrderDetails</b> <b>Table Description: This table includes information about the order details in a transaction.</b> <b>Related Tables: tblOrders</b>					
ID	Data Element	Description	Data Type	Length	Sample Data
PK	InvoiceNo	Invoice number	int	6	112
	Quantity	Number of stock	int	6	13
	Unit	Entity or Whole	varchar	20	pcs

	<b>Articles</b>	Description	varchar	50	This is for sale
	<b>UnitPrice</b>	Price of product per quantity	decimal	(6, 2)	2580.00
	<b>Amount</b>	Amount to be paid	decimal	(6, 2)	2580.00
	<b>ProductID</b>	Product Identification	int	6	303

*Table 14*  
*tblOrderDetails Table*

**Table Name: tblOrders**

**Table Description: This table includes information about the order made in a transaction.**

**Related Tables:**

ID	Data Element	Description	Data Type	Length	Sample Data
<b>PK</b>	<b>ReceiptNo</b>	Receipt number	int	6	1231
<b>FK</b>	<b>InvoiceNo</b>	Invoice number	int	6	10921
	<b>SoldTo</b>	Name of the customer	varchar	50	Hiddcel
	<b>Address</b>	Address of the customer	varchar	50	Caloocan
	<b>TotalAmount</b>	Total bill	decimal	(6, 2)	24.00
	<b>Date</b>	Date of transaction	date		6/15/2014

*Table 15*  
*tblOrders Table*

**Table Name: tblProducts**

**Table Description:** This table includes information about the products being sold by the company.

**Related Tables:**

ID	Data Element	Description	Data Type	Length	Sample Data
<b>PK</b>	<b>ProductID</b>	Product's identification	int	6	123
<b>FK</b>	<b>TransactionID</b>	Transaction's identification	int	6	143
	<b>ProductCode</b>	Code description of product	varchar	20	51213
	<b>ProductName</b>	Name of product	varchar	50	Boysen
	<b>Category</b>	Category of product	varchar	50	Paint
	<b>Supplier</b>	Name of supplier	varchar	50	Cheng
	<b>ReceivedQuantity</b>	Number of quantity received	int	6	100
	<b>OriginalQuantity</b>	Original quantity of the product	int	6	100
	<b>Quantity</b>	Remaining quantity	int	6	15
	<b>ProductLimit</b>	Warning limit of the product	int	6	3
	<b>OriginalUnit</b>	Original unit of the product	varchar	50	190
	<b>Unit</b>	Unit of a product	varchar	50	boxes
	<b>OriginalPrice</b>	Original price of the product	decimal	(6, 2)	2580.00
	<b>SellingPrice</b>	Selling price of the product	decimal	(6, 2)	2580.00

	<b>DatePurchased</b>	Purchased date of the product	date		8/8/2014
	<b>Path</b>	Image location	varchar	(MAX)	C:\Users\hiddcel\Desktop\DATABASE\images(7).jpg
	<b>onDB</b>	Status on database	varchar	50	False
	<b>Description</b>	Description of the product	varchar	(MAX)	This is paint
	<b>Length</b>	Type of unit of the product	varchar	50	length
	<b>LengthUnit</b>	Length unit of the product	varchar	50	meter
	<b>Width</b>	Type of unit of the product	varchar	50	width
	<b>WidthUnit</b>	Width unit of the product	varchar	50	centimeter
	<b>Thickness</b>	Type of unit of the product	varchar	50	thickness
	<b>ThicknessUnit</b>	Thickness unit of the product	varchar	50	millimeter
	<b>Volume</b>	Type of unit of the product	varchar	50	Volume
	<b>VolumeUnit</b>	Volume unit of the product	varchar	50	liters
	<b>Color</b>	Color unit of the product	varchar	50	White
	<b>Texture</b>	Texture unit of the product	varchar	50	Rough
	<b>Others</b>	Other types of unit of the product	varchar	50	Other
	<b>OthersUnit</b>	Other unit of the product	varchar	50	grind

	<b>SubCategory</b>	Other sub category of products	varchar	50	rounded
--	--------------------	--------------------------------	---------	----	---------

*Table 16*  
*tblProducts Table*

**Table Name: tblSettings**

**Table Description: This table includes information about the settings of the system.**

**Related Tables:**

ID	Data Element	Description	Data Type	Length	Sample Data
PK	themeID	Theme's identification	int	6	101
	theme	Type of the theme	varchar	(MAX)	-1
	receiptStart	Receipt starting number	int	8	1
	invoiceStart	Invoice starting number	int	8	1

*Table 17*  
*tblSettings Table*

**Table Name: tblSupplier**

**Table Description: This table includes information about the Supplier of the company.**

**Related Tables: tblProducts**

ID	Data Element	Description	Data Type	Length	Sample Data
PK	SupplierID	Supplier's identification	int	100	11

	<b>CompanyName</b>	Name of the Company	varchar	50	RSL
	<b>ContactPerson</b>	Name of the Supplier	varchar	50	Richard Lim
	<b>Street</b>	Name of street of the Supplier	varchar	50	Poblacion
	<b>CityTown</b>	Name of town/city of the Supplier	varchar	50	Bansud
	<b>StateProvince</b>	Name of State or Province	varchar	50	Oriental Mindoro
	<b>PostalCode</b>	Postal Code of the area	int	6	5210
	<b>Phone</b>	Phone number	varchar	12	043-000-0000
	<b>Mobile</b>	Mobile number	varchar	13	+639308135332
	<b>Email</b>	Email of the Supplier	varchar	50	sample@yahoo.com
	<b>Path</b>	Path of image	varchar	(MAX)	C:\dbEmrian\dbase\AS AA.jpg

*Table 18*  
*tblSupplier Table*

<b>Table Name: tblTempInvoice</b> <b>Table Description: This table includes information about the temporary Invoice details.</b> <b>Related Tables:</b>					
ID	Data Element	Description	Data Type	Length	Sample Data
PK	InvoiceNo	Sales Invoice number	int	6	112
	Quantity	Quantity per purchased product	varchar	6	14
	Unit	Entity or Whole	varchar	50	Length
	Articles	Description	varchar	MAX	This is long
	Price	Original price of the product	decimal	(6,2)	200.00
	Amount	Selling price of the product	decimal	(6,2)	200.00

*Table 19*  
*tblTempInvoice Table*



<b>Table Name: tblTransaction</b>					
<b>Table Description: This table includes information about the transaction in the system.</b>					
<b>Related Tables: tblProducts</b>					
ID	Data Element	Description	Data Type	Length	Sample Data
PK	TransactionID	Transaction's identification	int	6	13445
	InvoiceNo	Sales Invoice number	int	6	5436
	Supplier	Name of supplier	varchar	50	Adarna
	DatePurchased	Purchased date of item	date		8/8/2014
	TotalProducts	Total number of products	int	6	150
	TotalAmount	Total expense	decimal	(6, 2)	2580.00

*Table 20*  
*tblTransaction Table*

<b>Table Name: tblUserAccount</b>					
<b>Table Description: This table includes information about the user of the system.</b>					
<b>Related Tables:</b>					
ID	Data Element	Description	Data Type	Length	Sample Data
PK	UserAccountID	User Account's identification	int	6	16
	UserName	User's username	varchar	50	xlprncss

	Password	User's password	varchar	50	HeIsWe
	Position	Position of the user	varchar	50	Admin
	Path	Path of the image	varchar	MAX	C:\dbEmrian\dbase\AS AA.jpg
	Status	Status of the User	varchar	50	online

*Table 21*  
*tblUserAccount Table*

### 3. Screen Design

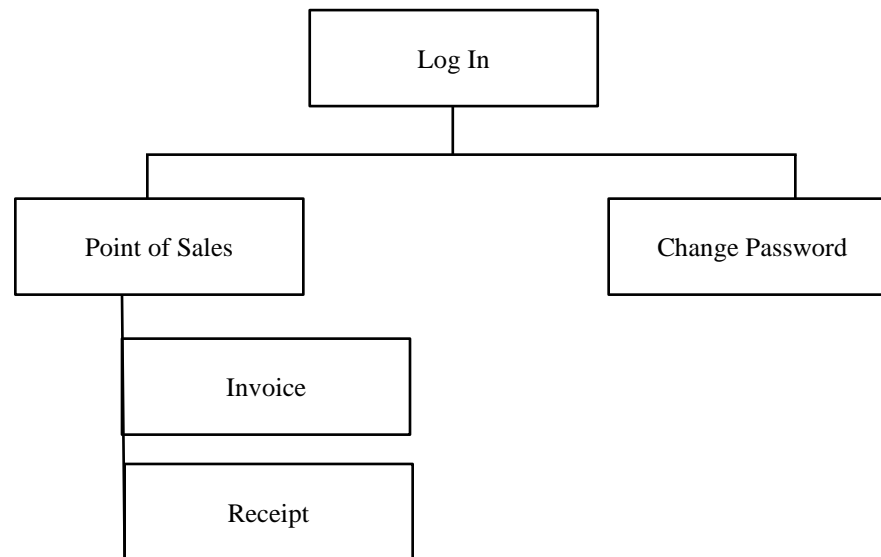
#### 3.1 Screen Inventory

No.	Name of Form	Description
1	frmAddProducts	Add Products. This is where product's information is being added.
2	frmAddSuppliers	Add Suppliers. This is where supplier's information is being added.
3	frmBackup	Backup. This is where the database is back-upped.
4	frmCategory	Category. This is where the categories of products are displayed.
5	frmChangePassword	Change Password. This is where user can change their password
6	frmInventory	Inventory. This is where product and sales inventory are displayed.
7	frmLogIn	Log In. This is where the user input his/her username and password to access the system.
8	frmLogs	Logs. This is where user's activities are recorded.
9	frmMMenu	Main Menu. This is the main application window.
10	frmOrderForm	Reports. This is where the order process for out of stock items is displayed.
11	frmPOS	Point of Sale. This is where the transaction is made.
12	frmProducts	Products. This is where items ready to be sold are displayed.
13	frmSettings	Settings. This is where the settings of the system can be changed.
14	frmSuppliers	Supplier. This is where the suppliers are displayed.
15	frmTransferIn	Delivery Items. This is where the delivered items are displayed.
16	frmTransferInf1	Add Transaction. This where the new transaction for suppliers are made.
17	frmTransferInf2	Choose Transaction. This is where transaction number for adding products is selected.
18	frmUpdateRetail	Change Retail unit and quantity, offers retail suggested price.
19	frmUserAccounts	User Accounts. This is where user can create a new account.

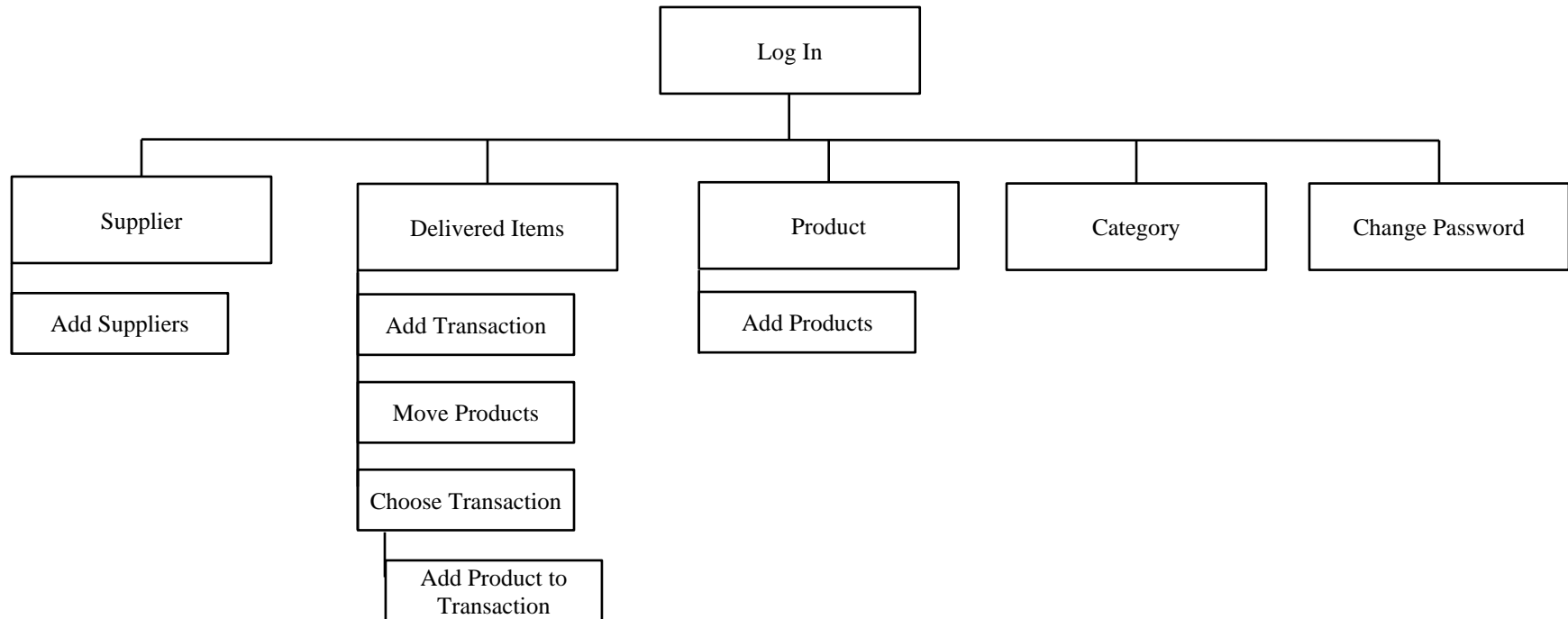
*sTable 22*

*Screen Inventory of  
New Emrian Sales and Inventory System*

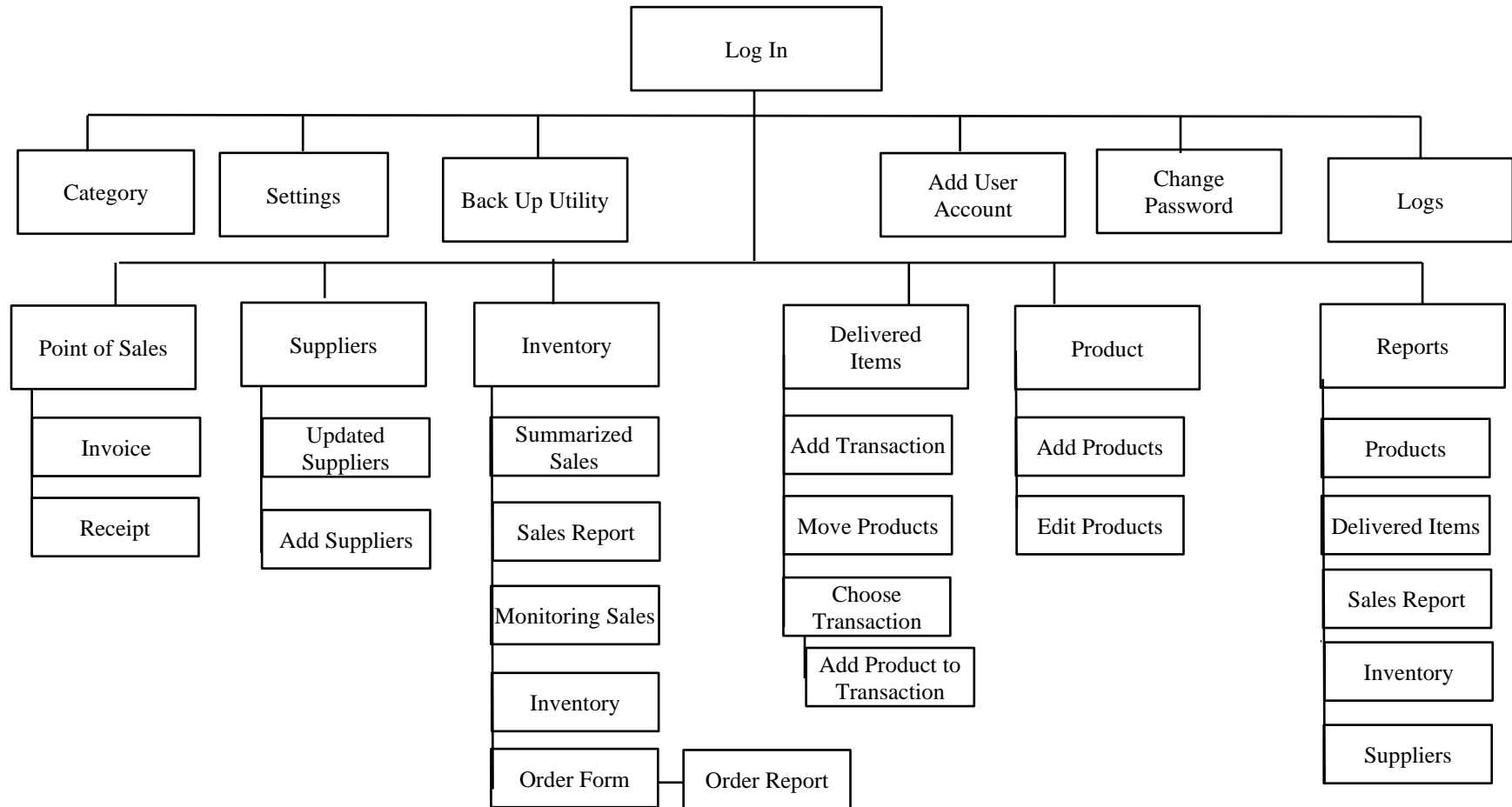
### 3.2 Screen Transition Diagram



*Figure 70*  
*User Account Screen Transition Diagram of*  
*New Emrian Sales and Inventory System*



*Figure 71*  
*Encoder Account Screen Transition Diagram of*  
*New Emrian Sales and Inventory System*



*Figure 72*

*Administrator Account Screen Transition Diagram of  
New Emrian Sales and Inventory System*

### 3.3 Screen Layout

Program Name: frmAddProducts

Screen Title: Add Products

Description: This is where product's information is being added.

Product Code:

Brand Name:

Category:

Sub Category:

Supplier:

Quantity:  Unit:

Date Purchased:

Set Warning Limit:

Original Price:

Selling Price:

length:

width:

thickness:

volume:

colors:

texture:

others:

desc:

*Figure 73*  
*Add Products*


Program Name: frmAddSuppliers

Screen Title: Add Suppliers

Description: This is where supplier's information is being added.



Add Supplier



Company Name:

Contact Person:

Street:

City/Town:

State/Province:

Postal Code:

Telephone:

Mobile:

Email:

043-000-0000

+639000000000

Add

Clear

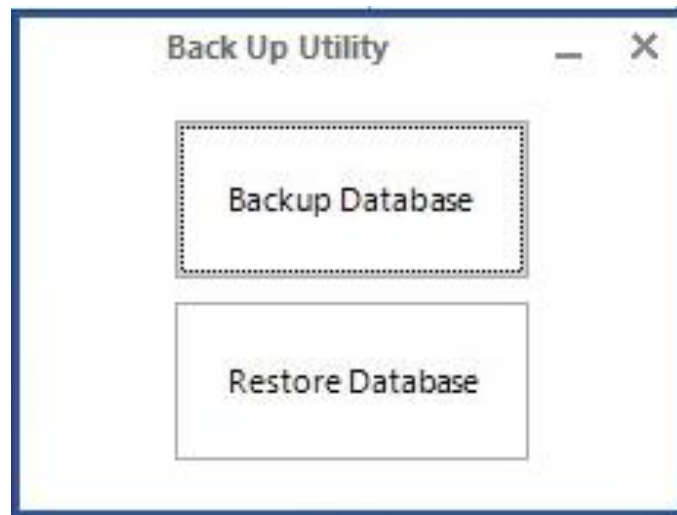
*Figure 74*  
*Add Suppliers*



Program Name: frmBackup

Screen Title: Back Up Utility

Description: This is where the database is back-upped and restored.



*Figure 75*

*Back Up Utility*

Program Name: frmCategory

Screen Title: Category

Description: This is where the categories of products are displayed.

5

Category Name

Category Name

Sub Category Name

Sub Category Name	

Length ☐

Width ☐

Thickness ☐

Volume ☐

Color ☐

Texture ☐

Others ☐

☒ Create Sub Categories

Add Clear

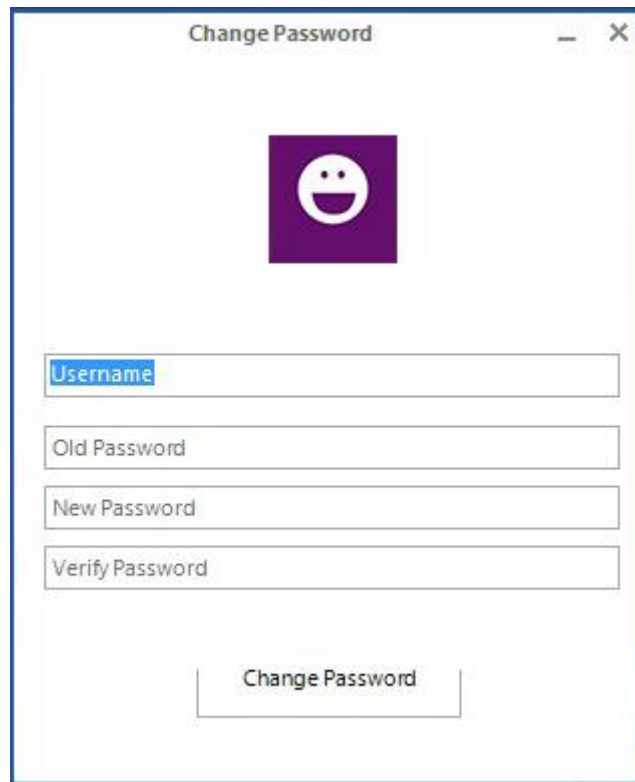
Save

*Figure 76*  
*Category*

Program Name: frmChangePassword

Screen Title: Change Password

Description: This is where user can change their password



Change Password

Username

Old Password

New Password

Verify Password

Change Password

*Figure 77*  
*Change Password*

Program Name: frmInventory

Screen Title: Inventory

Description: This is where product and sales inventory are displayed.

The screenshot displays the 'Inventory' application window. It features two main sections: 'Product Inventory' and 'Sales Inventory'. The 'Product Inventory' section on the left includes a search bar, a filter dropdown, and a 'Records' summary showing 117 total products and 10 total records. The 'Sales Inventory' section on the right includes a similar search and filter interface, with a 'Records' summary showing 2,900.00 total sales and 1 total record. Both sections have a 'Sales Overview per Item' summary showing Capital, Sales, and Income. The main data area is a table with columns for ProductName, Category, Sub Category, Original Qua..., Original Unit, Remaining It..., and Remaining.

ProductName	Category	Sub Category	Original Qua...	Original Unit	Remaining It...	Remaining
Door Knob	Regular Item		10	pcs	6	pcs
Firefly	Bulb	Fluorescent	5	boxes	5	boxes
Firefly	Bulb	Fluorescent	20	pcs	9	pcs
Firefly	Bulb	Incandescent	25	pcs	25	pcs
Firefly	Bulb	LED	10	boxes	19	pcs
Padlock	Regular Item		50	pcs	0	pcs
Philipps	Bulb	Incandescent	10	boxes	19	packs
Product1	Category1	SubCategory2	10	pcs	9	pcs
Product2	Category2	SubCategory3	10	pcs	10	pcs

InvoiceNo	ReceiptNo	SoldTo	Address	TotalAmount
1	1	melgrace	bansud	2900.00


Figure 78

Inventory

Program Name: frmLogin

Screen Title: Login

Description: This is where the user input the desired username and password to access the system.



A screenshot of a Windows-style login window titled "Login". The window has a yellow icon of a padlock in the top-left corner. The main heading inside the window is "New Emrian Hardware". Below the heading are two text input fields: the first is empty, and the second contains the placeholder text "Password". At the bottom of the window are two buttons: "Login" and "Cancel".

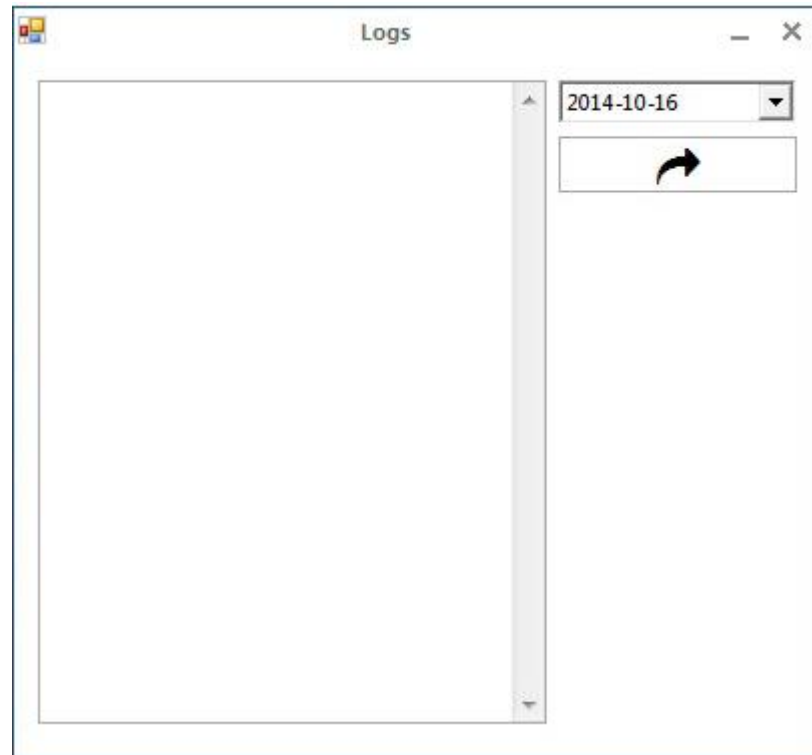
*Figure 79*

*Login*

Program Name: frmLogs

Screen Title: Logs

Description: This is where user's activities are recorded.



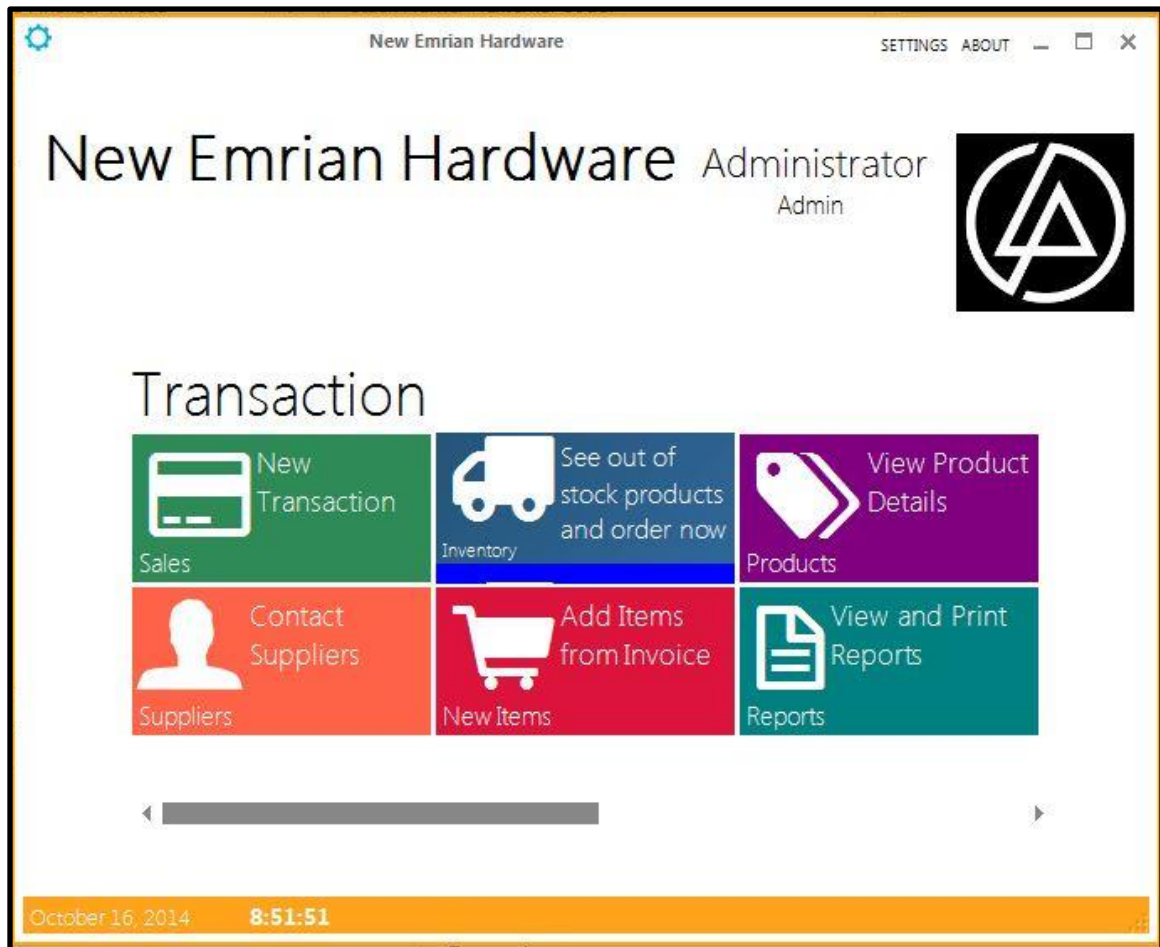
*Figure 80*

*Logs*

Program Name: frmMMenu

Screen Title: New Emrian Hardware

Description: This is the main application window.



*Figure 81*  
*New Emrian Hardware*

Program Name: frmOrderForm

Screen Title: Order Form

Description: This is where the order process for out of stock items is displayed.

The screenshot shows a software application window titled "Order Form". The window is divided into several sections:

- Suggest Suppliers:** Located in the top-left, it contains a text box for "Supplier", a text box for "Item Name", and a table with columns "Supplier" and "Price".
- Out of Stocks:** Located in the bottom-left, it has a dropdown menu labeled "Out of Stocks (Code Red)" and a table with columns "Item" and "Quantity Remai...". The table lists "Firefly" and "Padlock" with a quantity of 0.
- Generate Order Slip:** Located in the top-right, it contains a text box for "Supplier", and input fields for "Quantity", "Unit", and "Item Name" with a checkmark button.
- Main Table:** A large table in the center-right with columns "Quantity", "Unit", and "Items".
- Footer:** A navigation bar at the bottom with various icons, a "of" label, a "100%" zoom indicator, and "Find | Next" buttons.

*Figure 82*  
*Order Form*



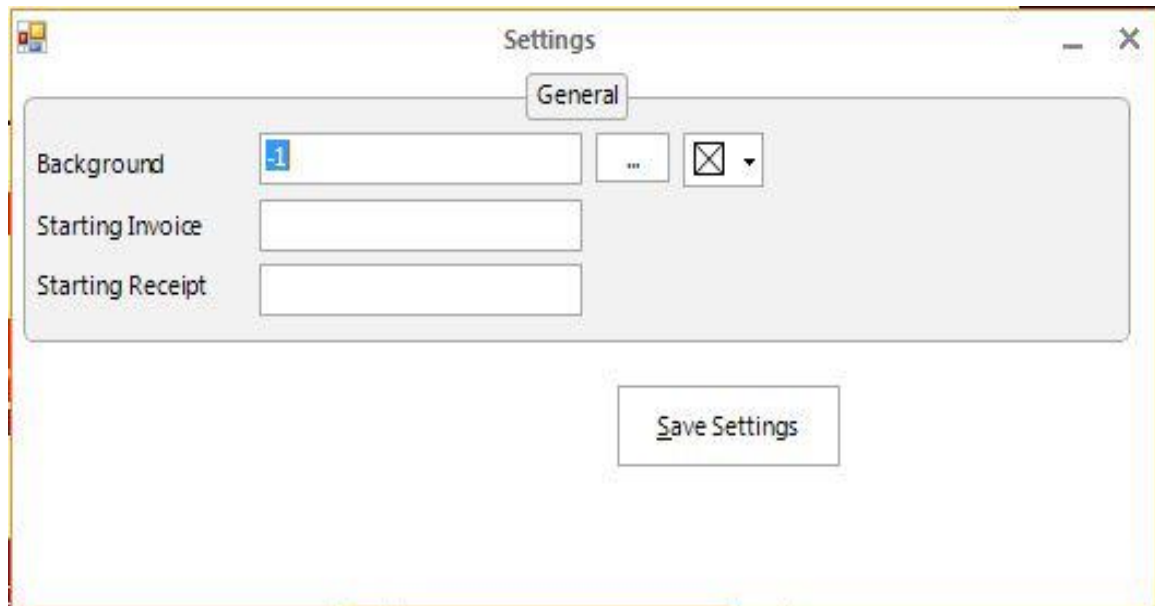


Figure 84  
Products

Program Name: frmSettings

Screen Title: Settings

Description: This is where the setting of the system can be changed.



The screenshot shows a window titled "Settings" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there is a tab labeled "General". Below the tab, there are three input fields:

- Background:** A text box containing the value "-1", followed by a button with three dots and a checkbox with a dropdown arrow.
- Starting Invoice:** An empty text box.
- Starting Receipt:** An empty text box.

At the bottom center of the window, there is a button labeled "Save Settings".

*Figure 85*

*Settings*

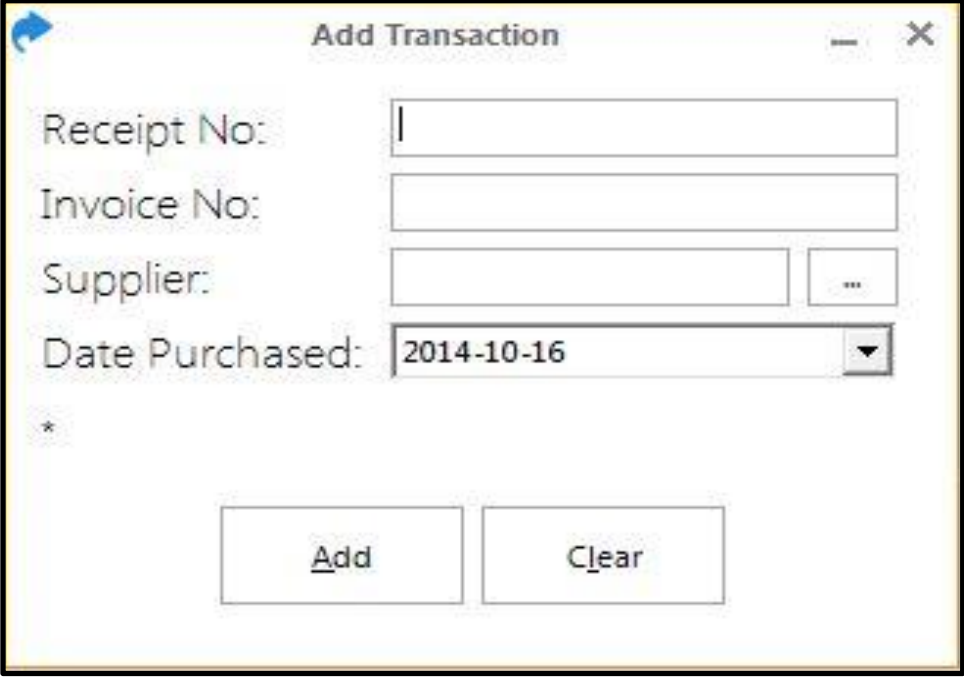


### Delivered Items

Program Name: frmTransferIn1

Screen Title: Add Transaction

Description: This where the new transaction for suppliers are made.



The screenshot shows a window titled "Add Transaction" with a blue arrow icon in the top-left corner and standard window controls (minimize, maximize, close) in the top-right. The window contains four input fields stacked vertically: "Receipt No:" with a text box containing a single character "I"; "Invoice No:" with an empty text box; "Supplier:" with a text box and a small button with three dots "..."; and "Date Purchased:" with a date picker showing "2014-10-16". Below these fields is an asterisk "\*" and two buttons: "Add" and "Clear".


*Figure 88*

*Add Transaction*

Program Name: frmTransferIn2

Screen Title: Choose Transaction

Description: This is where transaction number for adding products is selected.

The image shows a Windows-style dialog box titled "Choose Transaction". In the top-left corner, there is a blue icon of a curved arrow pointing upwards and to the right. The title bar contains the text "Choose Transaction" and standard window controls (minimize, maximize, close). The main area of the dialog box contains the text "Transaction No:" followed by a rectangular text input field. To the right of the input field is a button with a circular icon containing a downward-pointing arrow, enclosed in a dashed border.

*Figure 89*

*Choose Transaction*

Program Name: frmUpdateRetail

Screen Title: Retailing Units

Description: Change Retail unit and quantity, offers retail suggested price.

Original Unit:	pcs	Retail Unit	Retail Unit
Original Quantity:	10	Quantity:	Quantity per unit
Original Price / Unit:	170.00	Total Quantity:	Total Quantity
Total Price:	Computed Price	Retail Price:	Retail Price
		Selling Price:	Selling Price

Summary

OK

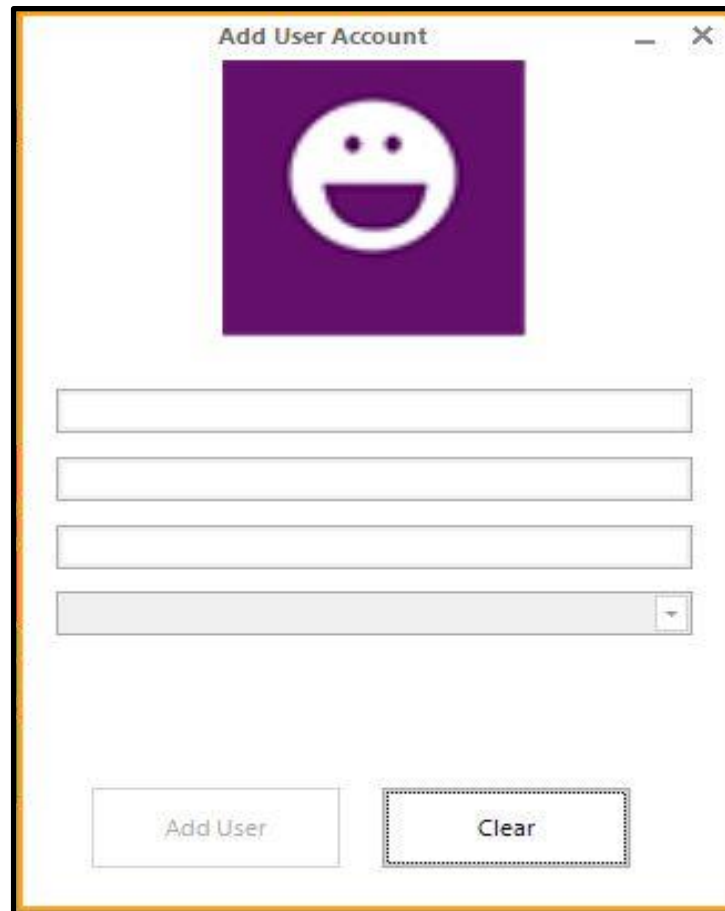
*Figure 90*  
*Retailing Units*



Program Name: frmUserAccounts

Screen Title: Add User Account

Description: This is where user can create a new account.



The screenshot shows a Windows-style dialog box titled "Add User Account". At the top center is a large purple square with a white smiley face icon. Below this icon are four input fields: three text boxes and one dropdown menu. At the bottom of the dialog are two buttons: "Add User" and "Clear".

*Figure 91*  
*Add User Account*

#### 4. Reports Design

##### 4.1 Reports Sales and Inventory

No.	Name of Report	Description
1	rptDelivered	This Report shows the products delivered and the name of Supplier.
2	rptDeliveredItems	Shows the list of delivered items filtered per transaction and supplier.
3	rptDetailedSales	Shows reports of the fast moving and slow moving items.
4	rptFilteredSales	Shows report ranging from daily, weekly, monthly, yearly and between sales.
5	rptInventory	Shows the inventory including the out of stock items.
6	rptInvoice	Shows the record of transaction occurred, including number of items bought.
7	rptMonitoring	Shows list of fast and slow moving items.
8	rptOrderList	Shows printable order form generated using the system.
9	rptProducts	Shows the master list of Products.
10	rptReceipt	Shows the receipt or the summary of transaction
11	rptSuppliers	Shows the master list of Suppliers.

*Table 23*  
*Reports Sales and Inventory of*  
*New Emrian Sales and Inventory System*

4.2 Reports Layout

Report Name: rptDelivered

Report Title: Delivered Items

Description: This Report shows the products delivered and the name of Supplier.

10/12/2014 2:48:24 PM

NEW EMRIAN-HARDWARE

**NEW EMRIAN HARDWARE**  
Maligaya, Gloria, Oriental Mindoro  
KAREN M. BERNABE - Prop.  
VAT Reg. TIN 059-165-000

STOCKS-IN REPORT

Transaction ID	Invoice No	Supplier	Date Purchased
1	1	Monal Instruments	2014-10-10

Figure 92  
Delivered Items

Report Name: rptDeliveredItems

Report Title: Delivered Items

Description: Shows the list of delivered items filtered per transaction and supplier.

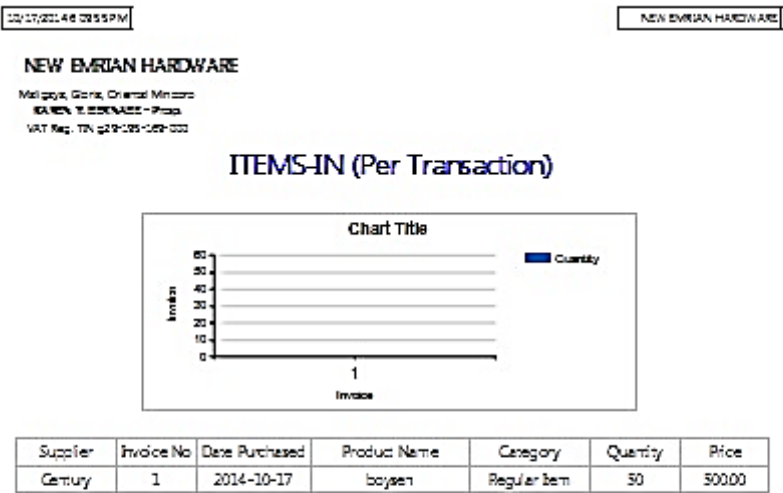


Figure 93

Delivered Items

Report Name: rptDetailedSales

Report Title: Summarized Sales

Description: Shows reports of the fast moving and slow moving items.

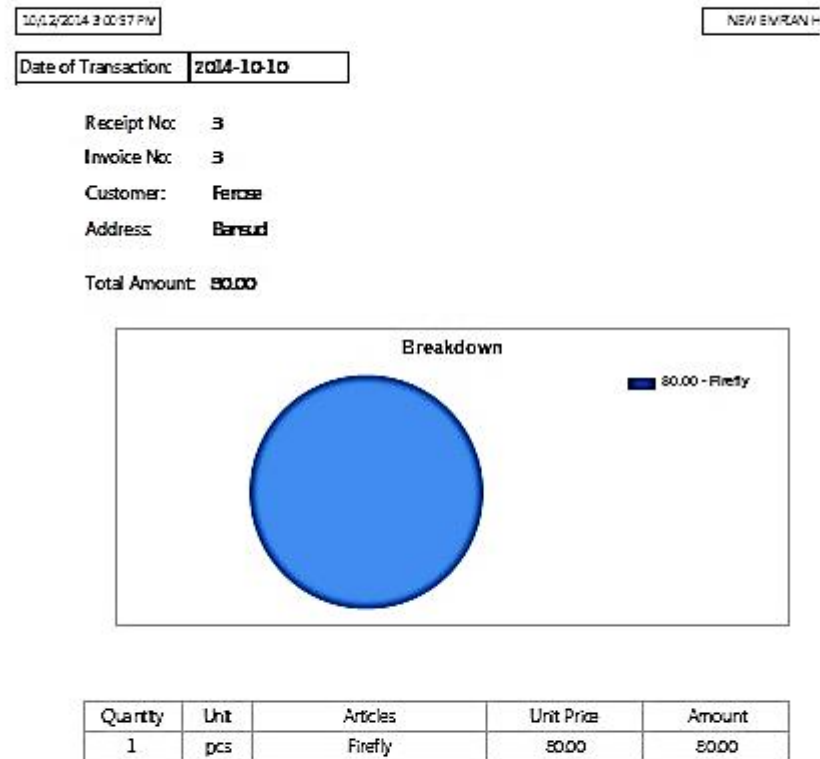


Figure 94  
Summarized Sales

Report Name: rptFilteredSales

Report Title: Sales Report

Description: Shows report ranging from daily, weekly, monthly, yearly and between sales.

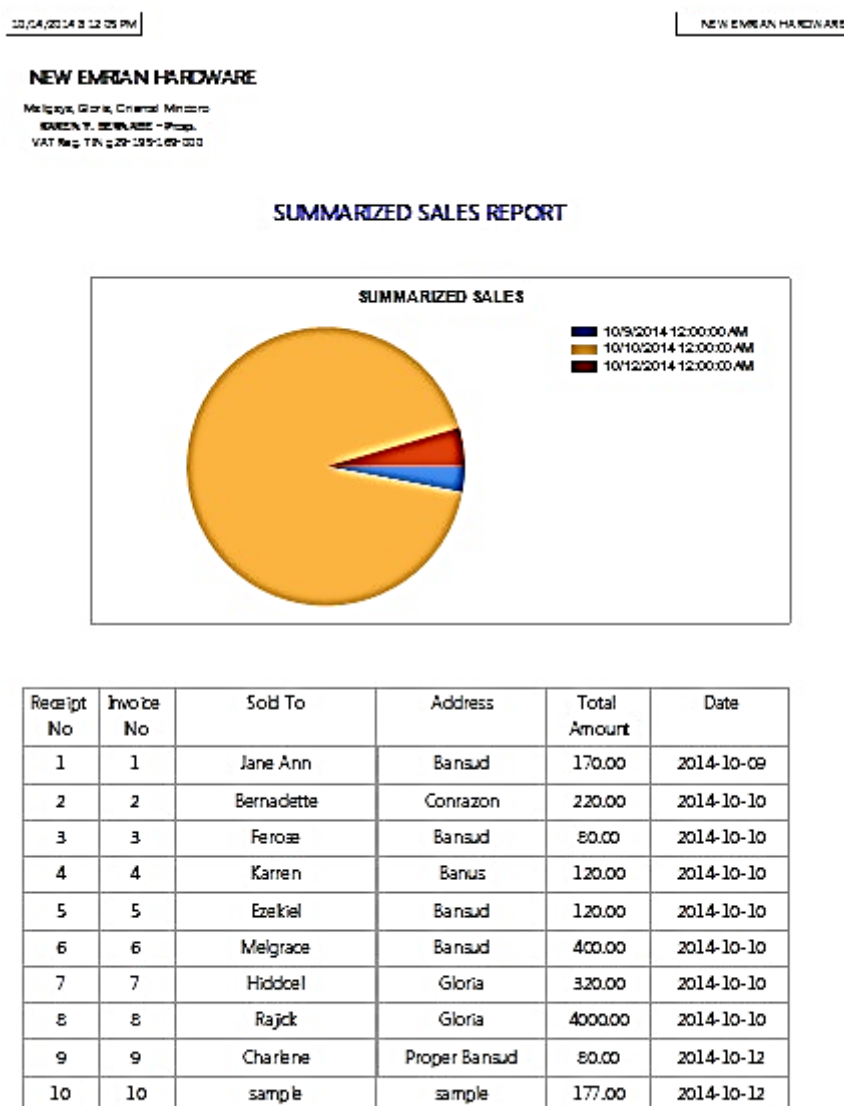


Figure 95  
Sales Report

Report Name: rptInventory

Report Title: Inventory

Description: Shows the inventory including the out of stock items.

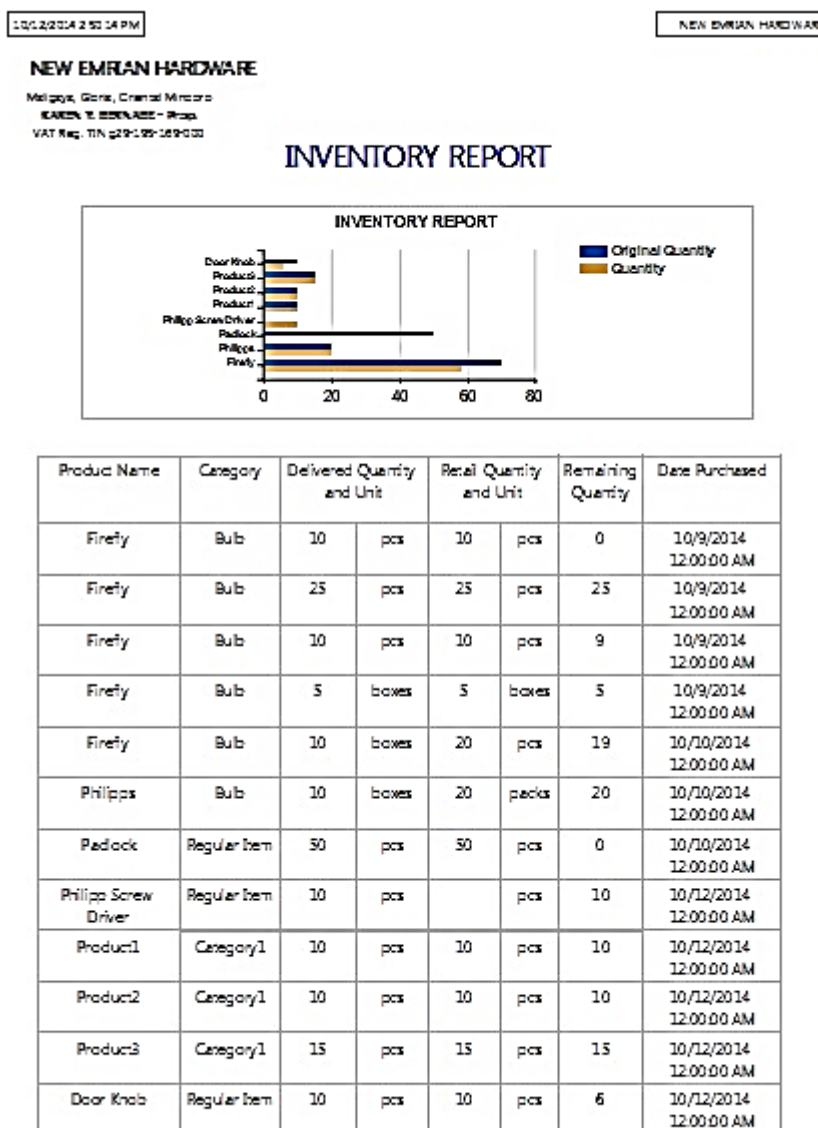


Figure 96

Inventory

Report Name: rptInvoice

Report Title: Invoice

Description: Shows the record of transaction occurred, including number of items bought.

### NEW EMRIAN HARDWARE

Maligaya, Gloria Or. Mindoro  
KAREN Y. BERNABE - Prop.  
VAT Reg. TIN g29-195-169-000

### SALES INVOICE (Private)

Sold To: sample Date: 10/12/2014 2:53:25 PM  
TIN: \_\_\_\_\_ Terms: \_\_\_\_\_  
Address: sample OSCA/PWD ID No: \_\_\_\_\_  
Business Style: \_\_\_\_\_ Cardholder's Signature: \_\_\_\_\_

QUANTITY	UNIT	ARTICLES	UNIT PRICE	AMOUNT
1	pcs	Product1	180.00	180.00
			Total Sales (VAT Inclusive)	180.00
			Less: VAT / Discount	3
		Variable Sales	Amount Net of VAT	160.71
		VAT-Exempt Sales	Less: SCPWD Discount	
		Zero Rated Sales	Amount Due	160.71
		VAT Amount	Add: VAT	19.29
TOTAL AMOUNT DUE				<b>177.00</b>

Figure 97

Invoice



Report Name: rptMonitoring

Report Title: Monitor Sales

Description: Shows reports of the fast moving and slow moving items

10/14/2014 3:05:28 PM

NEW EMFLAN-HARDWARE

NEW EMFLAN HARDWARE

Maligaya, Gofa, Oriental Mindoro

ORIENTAL MINDORO - Prop.

VAT Reg. TIN 025-025-000-000

MONITOR SALES

Fast Moving Items

Articles	Column1
Firefly	5
Door Knob	3
Padlock	1
Product1	1

Figure 98  
Monitor Sales

Report Name: rptOrderList

Report Title: Order Report

Description: Shows printable order form generated using the system.

10/14/2014 8:32:49 PM	NEW EMRIAN HARDWARE		
<b>NEW EMRIAN HARDWARE</b> Malgaya, Gloria, Oriental Mindoro <b>KAREN Y. BERNABE - Prop.</b> VAT Reg. TIN g29-195-169-000			
<b>ORDER FORM</b>			
<b>Mortal Instruments</b>			
Quantity	Unit	Articles	Price
3	PCS	Firefly	
TOTAL AMOUNT: _____			

Figure 99  
Order Report

Report Name: rptProducts

Report Title: Products

Description: Shows the master list of Products

10/12/2014 2:44:11 PM

NEW EMRIAN HARDWARE

# **NEW EMRIAN HARDWARE**

Milagaya, Gloria Oriental Mindoro

CAREN Y. BERNABE - Prop.

VAT Reg. TIN 626-A-88-189-000

## **PRODUCTS' LIST**

Product Name	Supplier	Description	Original Price	Selling Price	Date Purchased
Firefly	Mortal Instruments		150.00	80.00	2014-10-09
Firefly	Mortal Instruments		120.00	130.00	2014-10-09
Firefly	Mortal Instruments		75.00	80.00	2014-10-09
Firefly	Mortal Instruments		75.00	80.00	2014-10-09
Door Knob	Mortal Instruments	High Quality Metal Door Knob	115.00	120.00	2014-10-12
Firefly	Mortal Instruments		150.00	80.00	2014-10-10
Philipps	Mortal Instruments		100.00	60.00	2014-10-10
Padlock	Mortal Instruments		50.00	80.00	2014-10-10
Philipp Screw Driver	Mortal Instruments		170.00	0.00	2014-10-12
Product1	Mortal Instruments	deac	150.00	180.00	2014-10-12
Product2	Mortal Instruments	deac2	140.00	150.00	2014-10-12
Product3	Mortal Instruments	deac3	150.00	160.00	2014-10-12

Figure 100

Products

Report Name: rptReceipt

Report Title: Receipt

Description: Shows the receipt or the summary of transaction



**\*OFFICIAL RECEIPT**

Date **10/12/2014 2:56:30**  
PM

Received from sample with TIN \_\_\_\_\_  
and address at sample engaged in the  
business style of \_\_\_\_\_, the sum of  
\_\_\_\_\_ pesos  
(P 177.00 in partial/full payment for \_\_\_\_\_

By: Username

Cashier/Authorized Representative

**10**

\*This is an unofficial receipt

Figure 101

Receipt

Report Name: rptSuppliers

Report Title: Suppliers

Description: Shows the master list of Suppliers

10/12/2014 2:41:45 PM

NEW EMRIAN HARDWARE

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Maligaya, Gofa Oriental Mindoro  
**KAREN Y. BERNABE** – Prop.  
VAT Reg. TIN 926-1-88-166-000

**SUPPLIERS' LIST**

Company Name	Contact Person	Address	Mobile	Email
Mortal Instruments	Jace	5210 Poblacion, Bansud, Or. Mindoro	+639000000000	jace@yahoo.com

Figure 102  
Suppliers

## C. System Requirements

### 1. Hardware/Software/Peopleware

#### 1.1 Hardware

##### Workstation

The following requirements should be met to ensure the full functionality of the system.

SERVER	
Hardware	Minimum Requirements
Processor	Intel( R) Pentium (R)/ CPU G630 /2.70 GHz
Memory	4 GB
Hard Disk Space	4 GB

*Table 24*  
*Server Requirements of*  
*New Emrian Sales and Inventory System*

CLIENT	
Hardware	Minimum Requirements
Processor	Intel( R) Pentium (R)/ CPU G620 /2.60 GHz
Memory	2 GB
Hard Disk Space	2 GB

*Table 25*  
*Client Requirements of*  
*New Emrian Sales and Inventory System*

##### Printer

The company needs at least one printer for printing of receipt, reports and the likes.

## 1.2 Software

SERVER	
Software	Minimum Requirements
Operating System	Windows 7
DBMS	Microsoft SQL Server 2008 R2

*Table 26*  
*Server Requirements of*  
*New Emrian Sales and Inventory System*

CLIENT	
Software	Minimum Requirements
Operating System	Windows 7
.Net Framework	Microsoft .NET Framework 3 Extended

*Table 27*  
*Client Requirements of*  
*New Emrian Sales and Inventory System*

## 1.3 People

The system would of course not function by itself in needed some people to operate it and it includes the following.

Category	Requirement	Description
Operation	Administrator	Has the overall access to the system.
	Encoder	The one who inputs records in the system
	Clerk	The one who is in charge in selling of products.
Development	System Analyst	Assesses the suitability of information systems in terms of their intended outcomes and liaise with end users, software vendors and programmers.
	Database Administrator	Responsible for the installation, configuration,

		upgrading, administration, monitoring, maintenance, and security of databases in an organization.
	Programmer	Specialist in one area of computer programming or to a generalist who writes code for many kinds of software.

*Table 28*  
*Peopleware Requirements of*  
*New Emrian Sales and Inventory System*

#### 1.4 Data

TBLORDERS	
No	Content Name
1	ReceiptNo
2	InvoiceNo
3	SoldTo
4	Address
5	TotalAmount
6	Date

*Table 29*  
*tblOrders Data Table*

TBLSUBCATEGORY	
No	Content Name
1	SubCategoryID
2	Category
3	SubCategory

*Table 30*  
*tblSubCategory Data Table*



TBLCATEGORY	
No	Content Name
1	CategoryID
2	CategoryName
3	Units
4	UnitValue

*Table 31*  
*tblCategory Data Table*

TBLORDERDETAILS	
No	Content Name
1	InvoiceNo
2	Quantity
3	Unit
4	Articles
5	UnitPrice
6	Amount
7	ProductID

*Table 32*  
*tblOrders Data Table*

TBLPRODUCTS	
No	Content Name
1	ProductID
2	TransactionID
3	ProductCode
4	ProductName
5	Category
6	Supplier
7	ReceivedQuantity
8	OriginalQuantity
9	Quantity

10	ProductLimit
11	OriginalUnit
12	Unit
13	OriginalPrice
14	SellingPrice
15	DatePurchased
16	Path
17	onDB
18	Description
19	Length
20	LengthUnit
21	Width
22	WidthUnit
23	Thickness
24	ThicknessUnit
25	Volume
26	VolumeUnit
27	Color
28	Texture
29	Others
30	OthersUnit
31	Subcategory

*Table 33*  
*tblProducts Data Table*

TBLUSERACCOUNTS	
No	Content Name
1	UserAccountID
2	UserName
3	Password
4	Position
5	Path
6	Status

*Table 34*  
*tbltblUserAccounts Data Table*

TBLSUPPLIERS	
No	Content Name
1	SupplierID
2	CompanyName
3	ContactPerson
4	Street
5	CityTown
6	StateProvince
7	PostalCode
8	Phone
9	Mobile
10	Email
11	Path

*Table 35*  
*tblSuppliers Data Table*

TBLSETTINGS	
No	Content Name
1	themeID
2	theme
3	receiptStart
4	invoiceStart

*Table 36*  
*tblSettings Data Table*

TBLTEMPINVOICE	
No	Content Name
1	InvoiceNo
2	Quantity
3	Unit
4	Articles
5	Price
6	Amount

*Table 37*  
*tblTempInvoice Data Table*

TBLTRANSACTION	
No	Content Name
1	TransactionID
2	InvoiceNo
3	Supplier
4	DatePurchased
5	TotalProducts
6	TotalAmount

*Table 38*  
*tblTransaction Data Table*

## **2. Security**

In this computerized and inter-connected era, companies hold and exchange vast amounts of personal data relating to employee and consumers whether a company obtains that data from another company in its role as a service provider or database manager, or whether it is the owner of the data, it is now well understood that companies that collect, maintain, or use personal information have a serious responsibility to protect the security and integrity of that information.

Security means protecting information and the system itself from unauthorized access, use, alteration of data or destruction of it.

The system requires a password to ensure that unauthorized people cannot use the system or access it. Usernames and passwords are case sensitive, which makes the system more secured. The password is encrypted and decrypted in the database for a higher security level. User accounts have a user-level-accessibility feature wherein different user accounts can only access feature required for their position.