INVENTORY MANAGEMENT SYSTEM PROJECT DOCUMENTATION
CHAPTER 1 - INTRODUCTION

Project Context

In today's generation, we are engaged in highly computerized technology aiming to make individual lifestyle more comfortable and easier most especially in the world of business. The manual system is now considered the first process after the birth of the computerized system. Online transaction is now very common to widen the target market of the company. It becomes more efficient to the customer considering it can save time and considered hassle-free. The most commonly used system by several companies is the sales system and inventory system creating a web-based system. Advanced system on sale provides more reliable recording of sales of the company with comparison to its actual cost. In addition to the data information needed by the company to decide matters in relation to inventory can be easily generated. Moreover, the inventory control which ensures stocking the in-demand and correct items in the correct quantities.

This sales and inventory system can help the company to avoid overstocking. When the company overstock, the fund will not back easy because the cycle of the stock is a stop for unneeded items required time, space, and fund which could have been used on more critical assets.

The computer is a useful technology in our society that makes our work easy to wrap-up. Nowadays, computer technology continues to evolve and grow fast. Then every business in our society started shifting from using the manual system to an automated one that makes our work easier and faster.

Point of Sales and Inventory System is a computer is an easy way of checking and listing of the sales of the company, it is faster and more reliable rather than doing manually. The system can minimize human errors in editing and be easily access anytime by the company. Sales and inventory system make the company more effective, more productive and is convenient for the company and its customers. The system is making to help the establishment show more relevant items to the customers.

Purpose and Description

The purpose of the Point of Sales and Inventory system is to serve customers efficiently. This study aims to help the staff/employees of TH Garment Center make their work faster by using the system where they can monitor the remaining products in the records where they can see in the database. The system will provide a good service to the company like better transaction process that brings bigger profit.

General Objective

The main objective of this research is to improve the manual system of TH Garments in checking and adding the stock from the supplier. The new system can fix the problem in managing records for easier monitoring and tracking and help the workers to have a faster way of recording details of each transaction.

Specific Objectives
- To develop a module that generates reports monthly sales and inventory
- To develop security in terms of keeping the records of the inventory
- To develop a system that can monitor the stocks in and stock out and the inventory in a fast and efficient manner
- To accurately record, compute and produce a report of sales

Scope and Limitations of the Study

        The sales and inventory system are focused on sales and inventory system of TH Garment. The store is located at Brgy. 4, Tayum Street, Kabankalan City. Along the process, the sales incurred by the said establishment will be updated automatically during every transaction. The transaction and recording process will be made accurate, fast and reliable due to the reduction of human error. The system will also provide computerized searching of inquired products; it will generate accurate records in the inventory, and it will also provide system security to protect the business in the records. This study does not include the following features: the use of barcode scanner technology, payroll for the establishment employees. It does not support the online transaction and accepts payment through checks.

Significance of the study

        This study is beneficial and helpful for the following:

Customer - They will be given more quality service which will be more convenient for them. The new system will lessen the time spent by customers in the buying and paying process.

Manager - If the manager wants to check the status of their sale, he just needs to login into the system than to check it manually.

Owner - The owner will also benefit from the system because he or she can manage the system which provides everything for the user, he can also benefit from the accurate records the system could produce.

Staff - The staff will have an easy way of recording the orders. They will not have problems in product orders since it's now computerized. They will not be having a hard time searching and updating the stocks.

Future Researcher - The future researchers can use this project as a sample study guide if ever they conduct some study to develop a system related to this kind of system. This project can serve as their reference; they can use the data in this project for further studies.

Definition of Terms

Garments – An item of clothing where clothes are manufactured

Inventory – Or stocks refer to goods and materials that a business holds for the ultimate purpose of resale sales and inventory system.

Sales – Is a type of selling an item or product in return for money or other compensation it is an engagement between customer and seller.

Technology – It is the use of system especially in computer and telecommunication for retrieving and sending of info.

Software – Is a based solution used to track sales and inventory of the garments.

CHAPTER 2 – RRL

Background of the Study

TH Garments Center started since September 1996, owned by Mr. Martyn Yu. It is located at Tayum Street, Kabankalan City. TH Garments Center is almost 20 years in service and yet they are still using the manual method in making their inventory.

The researchers conduct an interview to TH Garments Center and found out that the establishment is still using the manual system, the problem is in keeping records of sales and inventories; the establishment has encountered several problems regarding the monitoring and the stocks checking. In the case of TH Garments center, they are currently using the manual sales and inventory system wherein they list the items and compute sales manually. The proposed system of computerized sales and inventory with the TH Garments center, the tracking of sales, controlling of inventory, recording of products, calculating of numerical data and searching of the item will be translated into a computerize process considering speed, accuracy, and maintainability of the system.

Related System

Sales and Inventory System

According to Shah Janat (2010), the individual in a supply chain, even wholesaler, retailer or manufacturer or vendor, prefers to reduce inventories and then maintaining customer services so not to gone customers because of the non-availability of goods. Huge inventories are a drain on resources from the supplier, as it increases the profits cost of operations. So, it is no surprise that all firms want to reduce inventory in the supply chain. The inventory may be divided into various categories. In general, there are the six selected categories of inventories: First, the return of the stock, the inventory resulting from production or purchase in storages is called return of stocks, since the lots are produced or purchased in cyclical lots.

Second is the safety stocks, as the name selected, are maintained as security against uncertainties of demand and supply. The third is the decoupling stocks, which give the efficient needed by each decision-making unit to manage its operations independently and to optimize its capacity to, anticipate inventory which includes of stocks accumulated in advance of the expected peak in sales or that which manage of some Important event that does not occur on regular basis.

This has two categories, the time where stocks are the most sale and the speculation stocks. The fifth is the pipeline inventory which consists of materials actually being updated on or being changed from one place to another. Lastly, the dead stock which refers to the part of the non-selected inventory and is not the same to any further use in supply chain operations or markets.

Sales Monitoring System

According to Celkon Mobiles, (2010), Celkon is one of the leading manufacturing companies in India. We have available mobile phone solutions and hat is easy to use because it is wireless technologies in India. Celkon caters to the increasing smart needs because there are mobile users in the world. Our work is providing innovative mobile technology to every customer. At Celkon, we believe that every user needs and knowledge more experience than ever. We are dedicated to manufacturing customized user affordable phones. Our company added features to make sure the personality of the phone matches the taste of the user. The long-range capacity of products available at Celkon ensures that there is a phone for every pocket. Every Celkon product undergoes stringent quality tests at every stage of production.

According to Navarro (2012), Sales and Inventory System, a computer has his is general-purpose using devicewherecan be programmed or re-programmed to carry out the finite set arithmetic or local operation, the computer has a big role in our nation today because of our technology. Wherever you go computer still exist, especially in business it makes the procedure easy and source by programming the manual system into a computerized system. The purpose of technology in our daily life today has a big reason.
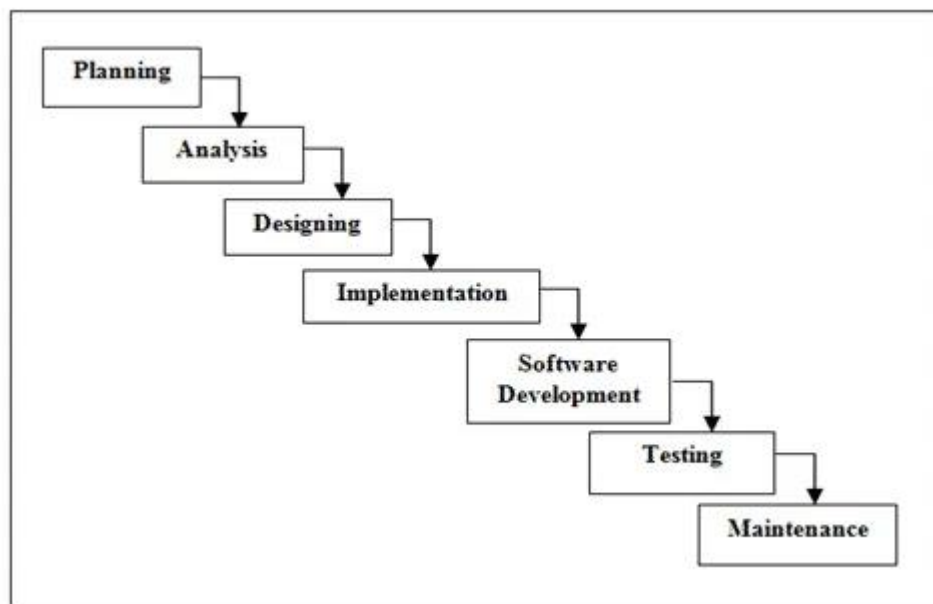
Technology is the marking, modification, usage, and knowledge of a new machine or a tool to crafts system method of organization in order to solve a problem, achieve a goal or perform its own function. It also refers to the stocks of such tools, machinery, modification arrangement, and procedure. Technologies significantly affect human as well other animal species ability to control and adapt to their natural environments.

CHAPTER 3 - DESIGN AND METHODOLOGY

The process used to collect information and data for the purpose of making a business settlement. The methodology can include disclosure of the research, interviews, surveys and the other research study techniques, and could include the same present and historical information.

Project Development

The project development started after conducting the interview and research about our proposed system. The grouped decided to use the Waterfall model for our proposed system development Life Cycle (SDLC) because the proponents really believe that using this model. The following process of this model for the development of this project is a step by step procedure to identify what the researchers are doing to develop the proposed system.

sales and inventory system thesis Project Development

Project Development Steps

Planning

The group conducted an interview in TH Garments Center at Tayum, Street Kabankalan City to gather data information. We have noticed that by updating their products they have to write manual in the record books and checking of the remaining items. For our proposed system, this will help to make it faster and accurate to control the inventory of their products by updating and adding using this computerized sales and inventory system.

Analysis

Doing the computerized sales and inventory system takes several risks, first the submission of the letter to the company, and also prepare to the problem that the system might encounter especially with regards to the security, unauthorized access and or problem to the operator's computer system, this includes viruses that might pop in the system.

Design

The software design is the development that matches the environment of the TH garments center for them to have easy system. The proposed system will be a major change for the establishment. All the transactions will be computerized. With the use of the new system, it will be much easier to modify information because the database of the system holds all the messages and a user-friendly interface is provided to customizing the data.

Implementation

After completing all the documents about the system, conducted test, and training on how to use the system and finally complete ready to be delivered in the to be used for their business work.

Software Development

The development of the system and the programming style or way that the developers do their work.

Testing

The group conducted some tests to make sure that the system is free of bugs and errors, this include performance and other testing procedures. It turned out good because the expected result came out to be actual results of the program. The testing is done every time. After adding some code in the system. There are times that the expected result happens.

Maintenance

The maintenance will be conducted once the unit delivered and deployed to the client to make sure that our system having a better performance. If the company suggested updating some feature or adding some function for the system to make it more efficient and reliable to them, they just need to contact the maintenance.

Architectural Diagram interface of hardware

The figure: 2 **Architectural diagrams of TH garments center.** The manager will be the admin that will manage to add staff and products, update and delete records for the database after adding the staff. The cashier will manage his unit for the sales; he will record all the sales report and store it in the database to generate a report to the manager for the printing.
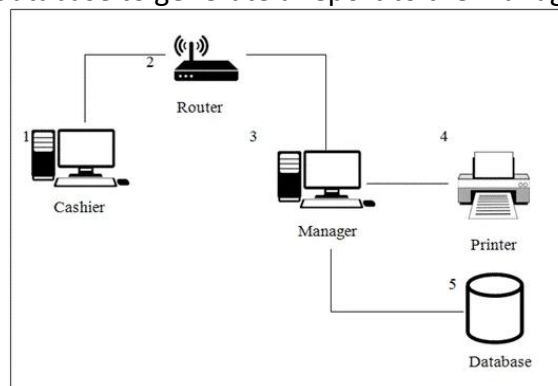

Figure 2: Architectural Diagram of TH Garments Center

System Testing and Implementation

In order to prove that the system is ready to deploy, the client of the project and to test the system to produce reliable information that makes the project more efficient and effective system testing and implementation is very important for the client to see the effects for the difference of the manual to computerize.

System Testing

To create this project successfully, we let our BSIT-3 classmates to test our TH Garments Sales and Inventory System in order for our group to receive a message or feedbacks from the testers in order to improve our system and to make it effective and functional.

TH Garments Sales and Inventory System is a customized system was created to improve the manual system of TH Garments in order for them to have an easy process of ordering and cashiering.

System Implementation

Once the builders assured that the system is ready to be deployed after the training, the implementation plan was executed. Everything went to the plan. The requirements for the hardware and the software were reached. The implementation was in its effective because the user of the system was easily adapting to the new system.

TH Garments Sales and Inventory System Features
- Inventory Management
- User, a customer staff, accounts management
- Report Generator
- Secure database for transaction records

Recommended hardware/Software/Network

Software Requirement:
- windows 7 ultimate/ professional
- Visual Basic 2008
- PHP, MYSQL, APACHE
- MYSQL Database and MYSQ utilities
- Crystal report

Recommended Hardware Requirement:
- Intel (R) Core (TM) i3-4170 CPU 3.70GHz
- Use memory ram 2.00GB
- Canon ip277
- Optic Mouse
- Keyboard
- Monitor

CHAPTER 4 – THE EXISTING SYSTEM

The TH garments center is still using the current manual system for their business work staff still writes all the transactions for their business process.

Objective

This section pertains to the identified objectives, which you can see the major end-results desired by this undertaking. This should be broken down into the statement of the:

General Objective

To develop a system that will enhance the monitoring of the sales and inventory of TH Garment.

Specific Objective

- To develop a module that can generate monthly sales and inventory report.
- To develop security in terms of keeping the records of the inventory
- To develop a system that can monitor the stocks inventory in a fast and efficient manner.
- To accurately record, compute and produce a report of sales.

Scope of the Study

A statement indicating the functional or application areas that will be covered by the study.

Scope of the existing System

The study only revolves in the scope of proposal sales and inventory control. The study of sales and inventory is only within TH GARMENTS. The proponents will also incorporate data reporting by producing hard copies. The system has four distinct types of level access. First, is the authority or Admin account, second is the Inventory account, third is the Cashier account and the fourth is Sale clerk account.

Concept of Operation

The administrators gain access to and perform high-level arrangement of the features of the system. The administrators were allowed to create new user accounts, reset user password, activate or disband user accounts, and monitor all system processes. The administrators can view and edit sales, inventory and dealers reports as well as their stock levels. The cashiers (front liners) input the actual sales transactions of the customer. They provide product descriptions and unit prices that are stored in the Sales and Inventory System databases. This function allows maximal complaisance, security, and centralization at different levels. The cashier is responsible for the preparing of daily, weekly, monthly and annual sales reports of the TH garment Staff Clerk.

The clerk will handle the day-to-day parts of inventory control and expenditure that serves the TH Garments.
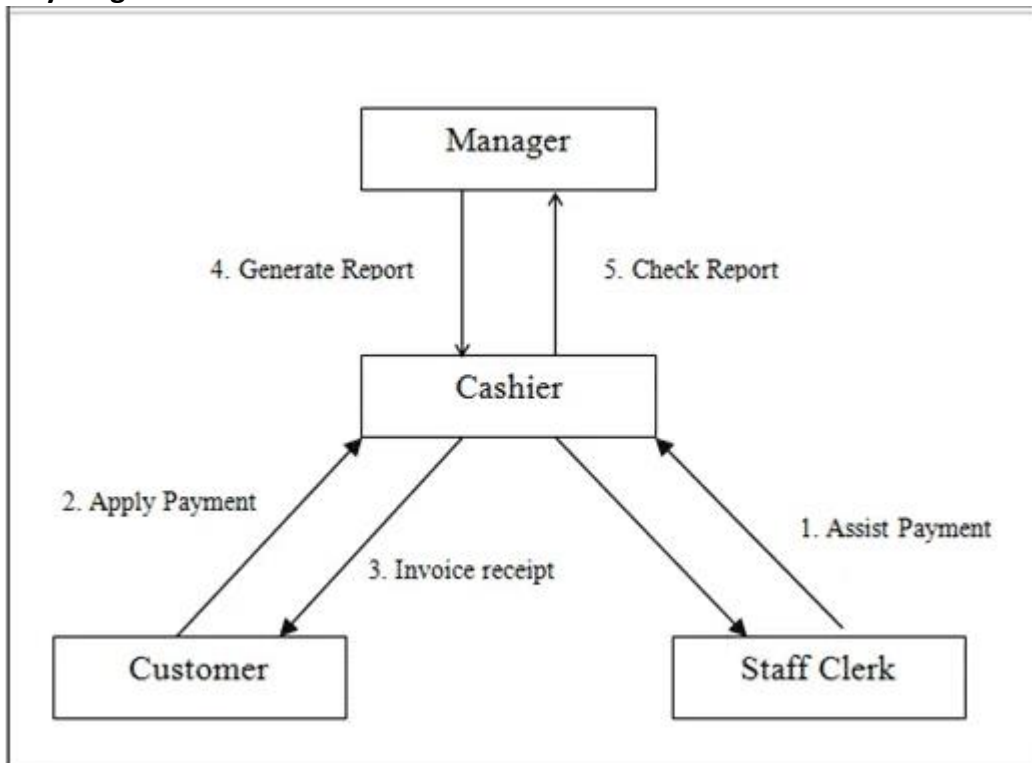
The Activity Diagram

Figure 3: Existing Activity Diagram TH Garments Center

The existing activity diagram of TH garments show the process of their business work the first process the customer will be assisted by the customer for the item they want to purchase the second process the customer will pay the item in the cashier the third process the customer will write all the item.

CHAPTER 4 – PROPOSED SOLUTION

Upon analyzing the problem gathered in TH Garments Center, the proponents came up with the solution to the problem of the establishment which is thru the use of the computerized system that will help the company to minimize the slow processing of orders and automatically generates reports.

Title and A Brief Description of The Proposed Solution

The proposed system entitled as TH Garments Center Computerized Sales and Inventory System which developed to make the manual system change to the computerized system in order to make their work more efficient and reliable for the processing of their transaction.

Scope of the solution

The proposed solution focuses only on how to manage the transaction adding products, updating records, managing staff information and generating a report for sales records that covered all the transaction for sales and inventory.

Concept of operation

The TH Garments Center Sales and Inventory System starts with the admin manager when the registered admin manager activated the system, he can now manage the system to add other users such as staff and cashier. If the customers wanted to buy a product, the staff can use the system to save the record of the products purchased from the customers after which the staff will save the record. The staff gives the records to the cashier to process the sales. After the process, the cashier would generate a receipt to be given to the customer. The manager will check the inventory records if there are products needed to stock in or stock out. If the manager noticed that there are out-of-stock products, the manager will order products to the supplier to be saved to stock in item records.
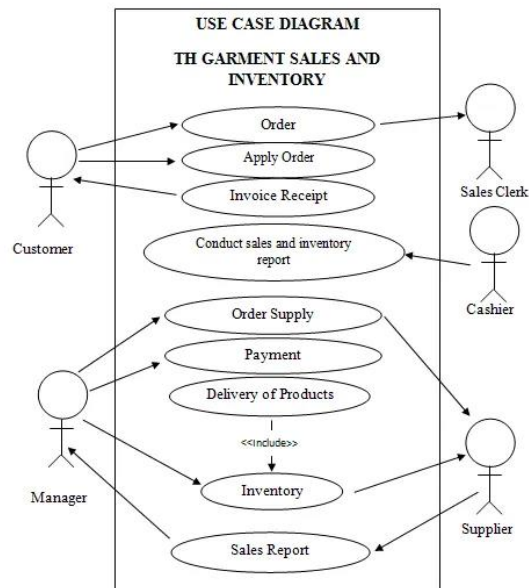

Figure 4: *Use Case Diagram of TH Garment Sales and Inventory System*

Use Case Description

Table 1: Order

Use case name:	Order
Description:	The customer purchased the product to the employee for his/her personal need.
Pre-Condition	The product should be available. The customer must request to purchase the order to the sales clerk. The customer must pay to the cashier before he/she gets the product.
Post-Condition:	Customer will pay the product and receive a receipt.
Alternative Flow:	The customer cancels the product that he/she purchased.
Exception Flow:	The Product is not available.

Table 2: Apply Payment

Use case name:	Apply for Payment
Description:	The customer pays the ordered product.
Pre-Condition:	The sales clerk will distribute the purchased product to the customer.
Post-Condition:	The cashier must issue official receipt/sales invoice to the Customer.
Alternative Flow:	The customer cancels to purchase the product.
Exception Flow:	The Product has damage.

Table 3: Invoice Receipt/s

Use case name:	Invoice Receipt/s
Description:	The cashier issued official receipt/sales invoice to the customer.

Pre-Condition:	The customer can get his/her purchased product.
Post-Condition:	The product that the customer purchased will be recorded to the Sales and inventory report.
Alternative Flow:	
Exception Flow:	

Table 4: Conduct sales and inventory report

Use case name:	Conduct sales and inventory report.
Description:	The cashier conducts sales and inventory report.
Pre-Condition:	The cashier report must be authorized by the manager.
Post-Condition:	The manager sees the records of the point sales and inventory report.
Alternative Flow:	
Exception Flow:	

Table 5: Order Supplies

Use case name:	Order Supplies.
Description:	The company order supplies.
Pre-Condition:	The product should be available. The company's management should fill up an ordered form.
Post-Condition:	The company must pay the product that they ordered from the Supplier.
Alternative Flow:	The supplier cancels the transaction.

Exception Flow:	The product that the company ordered is not available or not Sufficient.

Table 6: Payment

Use case name:	Payment
Description:	The payment of the ordered supplies.
Pre-Condition:	The company should pay the ordered product.
Post-Condition:	The company must pay the product that they ordered from the Supplier.
Alternative Flow:	
Exception Flow:	

Table 7: Delivery Product

Use case name:	Delivery Product
Description:	The delivery of the product by the supplier to the company.
Pre-Condition:	The supplier delivered the product.
Post-Condition:	The company checks the product that they ordered. The must record the product ordered in their inventory.
Alternative Flow:	The supplier should change the damaged product.
Exception Flow:	The product that the supplier delivers has damage.

Table 8: Sales Report

Use case name:	Sales Report
Description:	Show the report of the entire item to be sold.

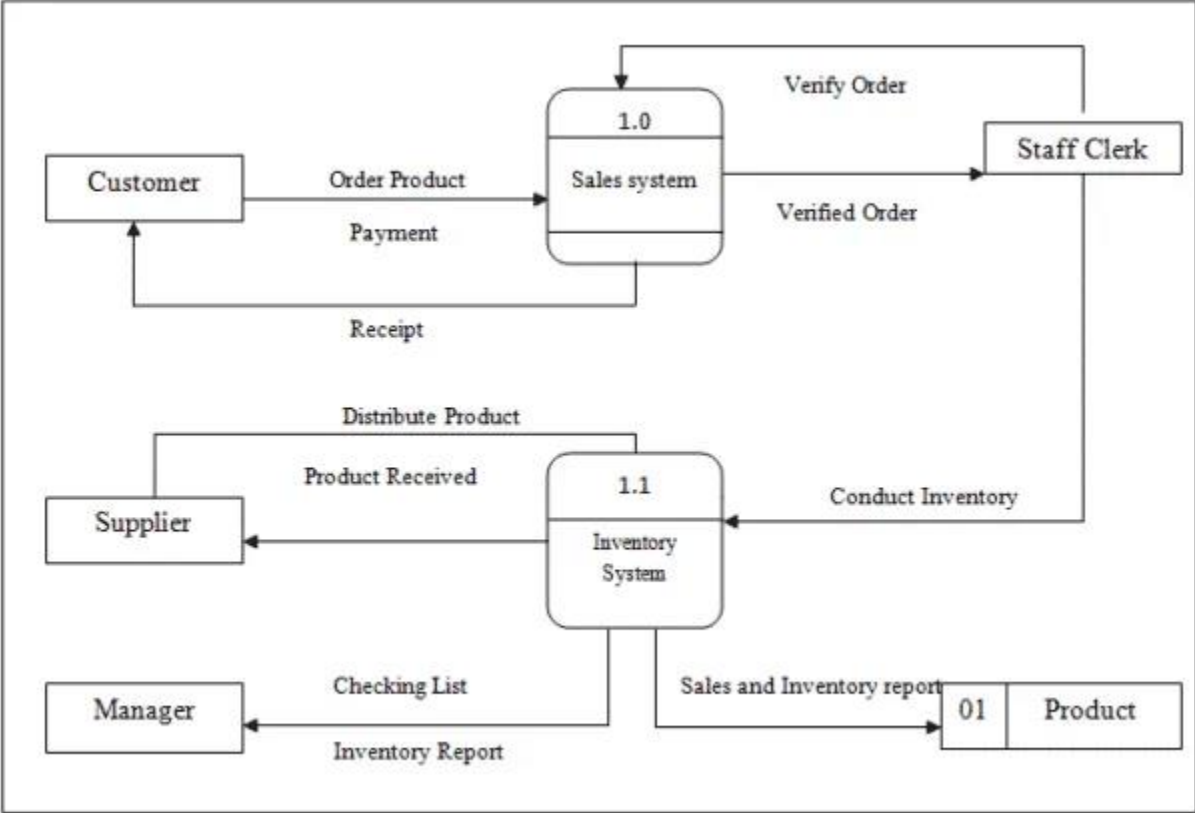|	
Pre-Condition:	1. The sales clerk manage the report to manager 2. If there a problem manager will ask the sales clerk.
Post-Condition:	The manager will check all the report.
Alternative Flow:	Sale report will save all the data to the database.
Exception Flow:	Sale clerk should submit a complete report to the manager of all sold item.

Data Flow Diagram

Figure 5: Data Flow Diagram of TH Garments Center

This figure 5 is the Data flow diagram of the TH Garments Center that shows the diagram of two process system. One is the sales system and the other one is the inventory system. The first entity is the customer, who will order the product to the sales system and at the same time apply the payment. Next entity is the employee, who will verify the product if it is available or not, and then the one who will conduct an inventory to an inventory system. The third entity is the manager, the one who checks the conducted inventory from the inventory system. And the last entity is the supplier, who will deliver the products to the company. After accomplishing these steps and receiving the receipts, the customer can take the product.

Data Dictionary

The table below shows the list of databases of TH Garment. It shows the attributes, descriptions and data types that are included in the database.

TABLE 9: tblCustomer

Field Name	Description	Type	Length
CusID(pk)	Customer ID	Int	11
Fname	First Name	Varchar	30
Lname	Last Name	Varchar	30
Address	Address	Varchar	30
Contact No.	Contact No.	Int	30

TABLE 10: tblProduct

Field Name	Description	Type	Length
ProdID(pk)	Product ID	Int	11
ProdName	Product Name	Varchar	30
ProdDescrip	Product Description	Varchar	30
ProdPrice	Product Price	Int	30
ProdQuant	Product Quantity	Int	30
ProdIn	Product In	Int	30
ProdOut	Product Out	Int	30

TABLE 11:tblStaffClerk

Field Name	Description	Type	Length
StaffID(pk)	Staff ID	Int	11
Fname	First Name	Varchar	30
Lname	Last Name	Varchar	30
DoB	Date of Birth	Int	30

Gender	Gender	Varchar	30
Address	Address	Varchar	30
Contact No.	Contact No.	Int	30

TABLE 12: tblCashier

Field Name	Description	Type	Length
Fname	First Name	Varchar	30
Lname	Last Name	Varchar	30
Age	Age	Int	30
Email	Email	Varchar	30
Address	Address	Varchar	30

TABLE 13: tblSupplier

Field Name	Description	Type	Length
SuppID(pk)	Supplier ID	Int	11
CompName	Company Name	Varchar	30
Email	Email	Varchar	30
Contact No.	Contact No.	Int	30

TABLE 14: tblInventory

Field Name	Description	Type	Length
ProdID(pk)	Product ID	Int	11
SuppID(fk)	Supplier ID	Int	11
ProdName	Product Name	Varchar	30
Stock In	Stock In	Int	30
Stock Out	Stock Out	Int	30

Stock Rec	Stock Record	Int	30

TABLE 15:tblManager

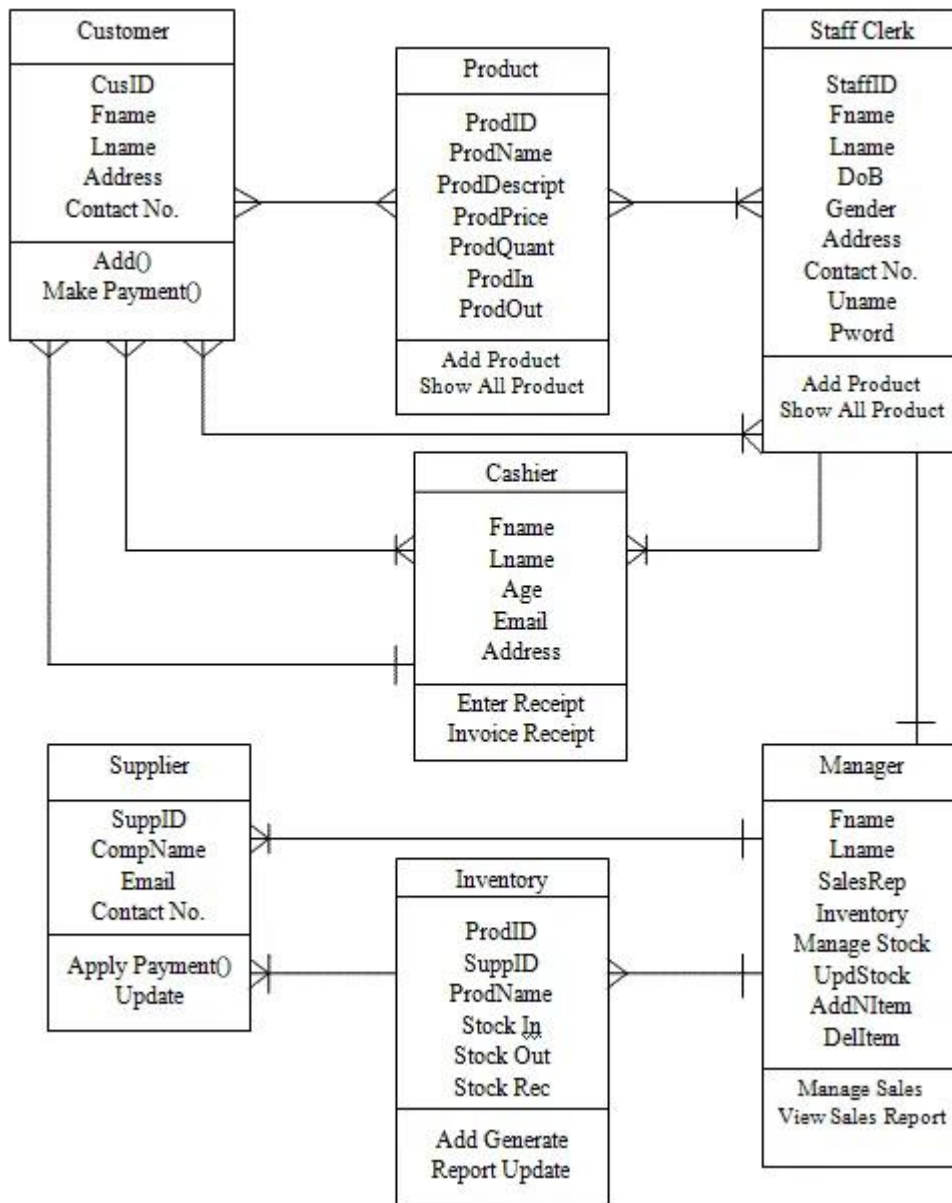| Field Name	Description	Type	Length
Fname	First Name	Varchar	30
Lname	Last Name	Varchar	30
ClerkAtten	Clerk Attendance	Varchar	30
SalesRep	Sales Report	Varchar	30
Inventory	Inventory	Varchar	30
Manage Stock	Manage Stock	Varchar	30
UpdStock	Update Stock	Varchar	30
AddNItem	Add New Item	Varchar	30
DelItem	Delete Item	Varchar	30

CLASS DIAGRAM

Figure 6: Class Diagram of TH Garments Sales and Inventory System

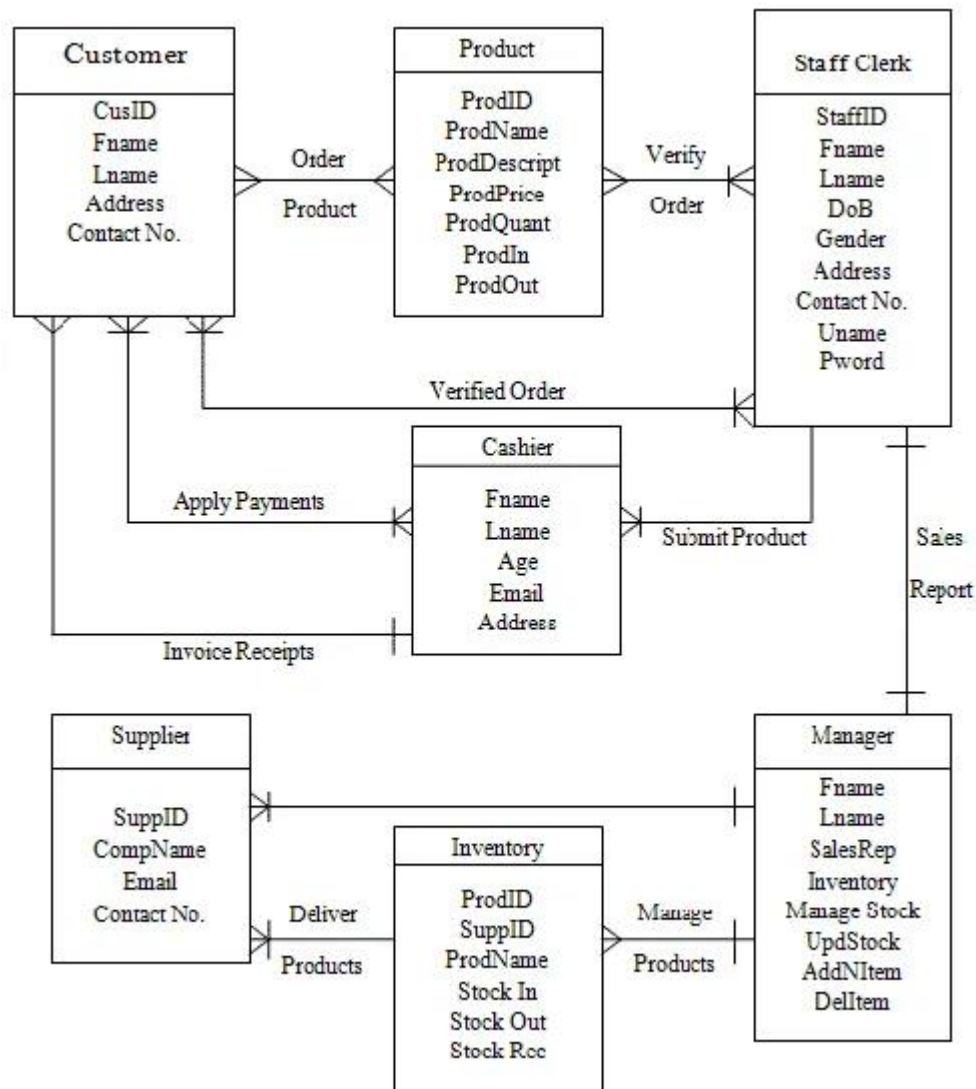**Entity Relationship Diagram**

Figure 7: Entity Relationship Diagram of TH Garments Sales and Inventory System

Advantages

The advantage of computerized sales and inventory is to make the process fast and accurate in the recording of sales and inventory. This makes effective and efficient sales and inventory system that can properly monitor the flow of the products from the sales and inventory. For a small business with few products, such management can be done manually, however as the size of business increases and the list of products grows. It becomes big and uneasy to track the goods of sales and inventory. That is why researchers mend to develop and make a computerized point of sale and inventory system solution that could efficiently handle the responsibility of sales and inventory system.

Disadvantage

Sales and inventory system are sometimes at a high price, and the price usually the issue for any system, but this system is not much expensive. Sales and inventory make business easier. Understanding the basic can be difficult and time-consuming and at the same time if you aren't getting the total grip of a computer. The company that sells it to you could also conduct an exercise session with your request.

Technical Feasibility

The system that will develop need users to have knowledge in using a computer, fortunately, the employees of TH garments are familiar with how to use computers. The owner is a computer literate they don't have computer in their business and is just planning to provide one for the system that will match the minimum software and hardware requirements.

Social and operational feasibility

The system that will be developed will solve the problem that the company encounters. The necessary solution is applied so that the user will be more at ease in their day to day operations. The demanding tasks that are efficient time consuming are minimized and lessen by applying an efficient method with the use of the system. Security and measure are applied in the system.

Economic feasibility

Economically performance was observed through project feasibility in advance trial and error of the material used like rental or buy to own the machinery. The proponents officially saved more manpower and material used in performing the project cost and saving.