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**PROJECT NAME : STOCK MANAGEMENT SYSTEM**

**PROJECT DESCRIPTION DOCUMENT**

**1.1 Introduction**

**1.2 Planning**

**STOCK: Is**the goods or merchandise kept on the premises of a shop or warehouse and available for sale or distribution. Then

**MANAGEMENT**: Is the process of dealing with or controlling things or people.

**STOCK MANAGEMENT**: refers to all the activities involved in developing and managing the stock levels of raw materials, semi-finished materials (work-in- progress) and finished good so that adequate supplies are available and the costs of over or under stocks are low.  (Rosenblatt, 1977) says: “The cost of maintaining stock is included in the final price paid by the consumer.

**SYSTEM:** A set of principles or procedures according to which something is done; an organized scheme or method. In simple word STOCK MANAGEMENT SYSTEM means

 is one can go into almost required solution regarding the stock. This software package provides guidance for all the stock management purpose, as a perfect guide, the current demand for such software became needful. This project will provide for computerization of a small enterprise whose main goal is to keep track on their inventory and stock process and wants to change from paper based transaction to computerized transaction. Using this software we can reduce costs for warehousing, transportation, order fulfilment, and material handling while improving customer service

**1.3 CASE STUDY OF SMS**

The scope of this system is to provide user efficient working environment and more output can be generated through this. This system provides user friendly interface resulting in knowing each and every usability features of the system.

This system helps in tracking records so that past records can be verified through them and one can make decisions based on the past records. This system completes the work in a very less time resulting in less time consumption and high level of efficiency.

This system is developed in such a way that even a naïve user can also operate the system easily. The calculations are made very quickly and the records are directly saved into databases and the databases can be maintained for a longer period of time. Each record can be retrieved and can be verified for the future transactions. The security of the system is very controlled where admin and user of the system are only one can change password of their account .

***1.4 AIMS AND OBJECTIVE OF THE SYSTE*M**

**The aim and objective of stock management system include the following:**

* To design a computer driven stock management system
* To make sure there is good and accurate record
* To enhance the effectiveness of staff
* To generate report on every goods in stock
* To keep track of goods  in terms of quantity

**1.5 THE PROBLEM STATE MENT OF STOCK MANAGEMENT SYSTEM**

The main problem of the old SMS are the following :

1.     Slow data processing

2.     Lot of paper work

3.     Time consuming

4.     Not user friendly environment

5.     Difficult to keep old records

**1.6 SOLUTION STATEMENT OF STOCK MANAGEMENT SYSTEM**

**The main solution of this new SMS is to solve problem that talk above as is from manual to computerising , the solution is the following:**

* To recording on Manual paper work it’s not easy to processing data of needed information y but on machine everything become so easy and quickly.
* It consuming a lot of time to gathering information and recording it when you are using paper work but as use of computer all thing will done online which become easy during the time of gathering information and recording
* It takes a lot of paper to record all transaction done in stock but as there are system that controlling that transaction there is no need of paper because all transaction are recorded by machine.
* Old system of recording and managing stock is too harsh to the user where is not friendly with them while computerised system have guidance to the user who use it which create friendship with user and become easy for them
* It is too difficult to keep data recorded on paper and last long period of time without damage of it while in computer data can be kept many years without any change ,data in computer can be deleted or updated by admin of the system

**1.7 LIMITATION OF SMS**

**T**he main obstacle during design of this project is the following:

* **Financial Constraints:**The design was achieved but not without some financial involvements. One had to pay for the computer time. Also the typing and planning of the work has its own financial involvements.
* **High programming Technique:**The programming aspect of this project posed a lot of problematic bugs that took us some days to solve. Problems such database connections using PHP and MYSQL database posed a lot of challenges.
* **Few Literature Sources:** The topic though seems to be a common term; it is not a popular topic to surf from the Internet. It had fewer literature sources.

**2.0 DESIGNE**

**2.1 THE DESIGNE AND IMPLENTETION OF STOCK MANAGEMNENT SYSTEM**

the A stock management system is a key part of supply chain and primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put away and picking. The systems also direct and optimize warehouse put away based on real-time information about the status of bin utilization.

Stock management system is an essential activity that must be undertaken in an organization to ensure proper management of inventories. In other to ensure for the proper management of inventories, systems and software has to be put in place. System has to be developed to keep proper track of all in-coming and out-going inventories.

The stock management system is basically designed to capture and automate all shipping of products into the warehouse of COMPANY and to keep records of all products sold out, with the main objective of the software being to bring efficiency .

***2.2 NON- FUNCTION REQUIREMENT OF THE SYSTEM***

* **Performance and scalability :** How fast does the system return results? How much will this performance change with higher workloads?
* **Portability and compatibility :**Which hardware, operating systems, and browsers, along with their versions does the software run on? Does it conflict with other applications and processes within these environments?
* **Reliability, maintainability ,availability :**How often does the system experience critical failures? How much time does it take to fix the issue when it arises? And how is user availability time compared to downtime?
* **Security :**How well are the system and its data protected against attacks?
* **Localization :**Is the system compatible with local specifics?
* **Usability :**How easy is it for a customer to use the system?

***2.3 FUNCTION REQUIREMENT OF STOCK MANAGEMENT SYSTEM***

* The system must allow user to login and log out
* It must allow user to review product
* It must allow admin of the system to delete and update supply or product
* System must allow reviewing all supply
* The system must be accessed by same one with user account

Our system is designed with the following entity which is needed to involved in the system in order to manipulating effectively

Which is:-purchase

-product

-customer

-supply

-product in and product out

**USER CASE DIAGRAM STOCK MANAGEMENT SYSTEM**

***Admin***

***ENTITY RELATION DIAGRAM***

Admin

Connect

Supply

Manage

Stock

check

report

Require

Categories

Check

From

Store

Product

3.0  **DEVELOPMENT**

The development of stock management system,its require different materials in developing it and to make sure that it works effectively like how it is expect to work in proper manner in its functioning

In group of 5 student we have decide to develop stock management system as new system of controlling and managing stock to replace old using paper work which means it new and have ability simplify power and time used in management and controlling of stock people

The following are material that used in implementing and developing stock management system:

**3.1 NETBEAN**

This is text editor that use in languages of java that is used in writing code in java programming , we have using this text editor in making form of project or frontier line of project not only that also it is net bean also where all codes taking place and all connection occur in this place and involving in it functioning.

Our stock management system was developed by using Apache Net Beans IDE 15 and java programming language. NetBeans is java-based integrated development environment (IDE) and such it uses java swing library to create the user interface (UI) for java applications. Swing provides a rich set of user interface components such as buttons, password fields, text fields, tables, labels and many more, that can be easily added to java application using drag-and-drop functionality in Net Bean, with that functionality we have designed front-end system with a good looking user interface by drag-and-drop necessary components like if we needed a form we drag-and-drop components like labels, text fields, and buttons that will be used to submit form data even displaying data from database into table component was done well. Net Beans also provide source code text editor for writing and editing java code with syntax highlighting, code completion, error highlighting and refactoring. That is where we have written all back-end codes including functions to record retrieve and update data in the database as well as other logic to handle system’s functionalities.

**3.2** ***Java swing***

We have using java swing to connect frontier end part and back end part of project.

**3.3 *JBDC CONNECTOR***

Through library in net bean we import jbdc connector or jar that helping us to connect java code , frontier end to database which developed in xampp as our local host and after that project start to work effectively and work according to database built in xampp in producing in its functionality to satisfy customer needs. Libraries chosen include Java Standard Edition Libraries (java virtual machine JVM, java development kit JDK and java runtime environment JRE), Swing. Platform such as github is used for version controlling and change tracking. Database is designed by using XAMPP server and it is connected to backend code with the use of MYSQL Connector Jar File and JDBC and storage like github cloud storage was used to store application files and on local machine application and its data well stored correctly. With the use of MYSQL Connector Jar file we was able to connect the back-end code with the database, allowing the system to communicate and perform operations like inserting data in and retrieving data from database

**3.4 MYSQL**

**M**ysql is the language that used in building and developing database ,we have using myself to built database with complete tables and relation where is needed in table primary keys and foreign key are shown to make relation with different table that are present in database . . XAMMP server was used to design MySQL database called stock with 7 tables such as **admin** (with fields: id PK, first name, last name, username, phone, email, password, address and created at), **category** (with fields: id PK, name, description, created at), **product** (with fields: id PK, barcode PK, category\_id FK, name, cost, quantity, total \_cost, created at), **supplier** (with fields: id PK, first name, last name, phone, email, address, created at), **shop** (with fields: id PK, name, address, created at), **production** (with fields: id PK, barcode FK, supplier\_id FK, quantity, cost, total, entry date) and **product Out** (with fields: id PK, barcode FK, shipside FK, quantity, cost, total, exit date). The above tables were designed with their relationships to ensure effective operation and connection between back-end, front-end and database of our stock management system.

**TESTING**

The system’s performance was tested and monitored by using manual testing methods to ensure quick response time and data accuracy. During this stage, we found some serious defects and bugs and worked our best to fix them. Firstly, forms were able to submit empty text fields into database to solve this problem we first checked if user filled some data in text field to processed the process of inserting that new record in database. Secondly, clicking delete or update buttons without selecting a record to delete or update used to cause bugs in the background, to solve this problem before running update or delete code we first check a condition to see if there is exactly a record selected and if yes that specific record would now be deleted or updated and if no record selected the message is displayed telling a user to select a record to delete or update. After fixing the above two bugs system now runs correctly without any bug and it have high accuracy of data as we expected before developing this stock management system.

**DEPLOYMENT**

Stock Management system was deployed on a local laptop for testing and performance monitoring. Starting from login form it authorize only user who type in username and password that matches any user database record if not it gives you error telling you that you enter incorrect username and or password. We also filled other remaining forms with data and submit them the result was what we expected because data were submitted into database tables exactly the way we wanted. The key functionality of our stock management system was to track ins and outs of products, so when you fill product In form quantity is added to the current quantity of that product if any and its total cost is calculated by multiplying unit cost and quantity it is also added to what was total cost before saving new record. Again by filling out product Out form system will check if requested quantity of product is available if no it will display message saying Quantity is not enough and if yes it quantity and its total cost will by deducted from what was the quantity and total cost for that specific product.