AUTOMATED WAREHOUSE MANAGEMENT SYSTEM

Viraj Bhor[*1], Nishant Jadhav[*2], Tushar Patil[*3], Shivprakash Bansode[*4], Dr. Siddharth Hariharan[*5]

[*1,2,3,4]Research Scholar, Department Of Computer Engineering, Terna Engineering College, Nerul, Navi Mumbai, Maharashtra, India.

[*5]Assistant Professor, Department Of Computer Engineering, Terna Engineering College, Nerul, Navi Mumbai, Maharashtra, India.

ABSTRACT

The goal of the Warehouse Management System is to automate the existing manual system using computerized equipment and full-fledged computer software to meet their needs, so that their valuable data/information may be saved for extended periods of time with easy access and manipulation. The required software and hardware are both readily available and straightforward to use. As previously said, a warehouse management system can lead to an error-free, secure, dependable, and rapid management system. It could allow the user to concentrate on other things rather than keeping track of their records. The company will be able to make greater use of its resources as a result. Without having to make repeated entries, the organization can keep computerized records. That means you won't be sidetracked by non-essential information while still getting the information you need.

Keywords: AWMS, WMS, Warehouse Management, Warehouse Automation, Automated Warehouse.

I.   INTRODUCTION

The Warehouse Management System (WMS) will provide a set of computerized and automated procedures to improve efficiency and minimize costs for any organization. It will help the admin and other members to manage all the operational warehouse activities efficiently the system will improve the efficiency and reduces the costs associated with warehouse management. Warehouse Management System, will lead to an error-free, secure, reliable, and fast management system. It was created to overcome the flaws in the traditional practice manual system. The goal is to automate its current manual system using computerized equipment and full-fledged computer software to meet their needs so that their valuable data/information can be saved for a longer time with easy accessibility. Essentially, the project outlines how to manage for improved performance and client services.

II.   LITERATURE SURVEY

Survey of Existing System:

Two issue dusters have been identified at the strategic level: one dealing with system and equipment selection based on technical capabilities, and the other with process flow design and warehousing system selection based on economic concerns. At the technical level, most decisions concern the determination of resource dimensions and the design of the organization. Several articles have been written about determining the size and layout of traditional warehouses. analyzing the layout of a conventional warehouse. It provides an optimization model to determine the optimal dimension of the layout, in order to minimize handling distance, handling time, space utilization or costs. A design approach that uses simulation and analytical tools to determine the size and layout of a traditional warehouse, with a focus on storage capacity. Also, it presents an analysis of the required storage capacity as a function of product and order characteristics.

Limitations of Existing System:

a. Lack of Layout Edit Option – The Previous Systems did not have a good editing option for layout and storage was not able to do according to layouts thus, the storage of stocks was a big task.

b. Limit for Stuckists – The previous System didn't have the feature of a stockiest to login in system and details of every stock delivered and take the help of the system to store stocks according to layouts.

III.   METHODOLOGY
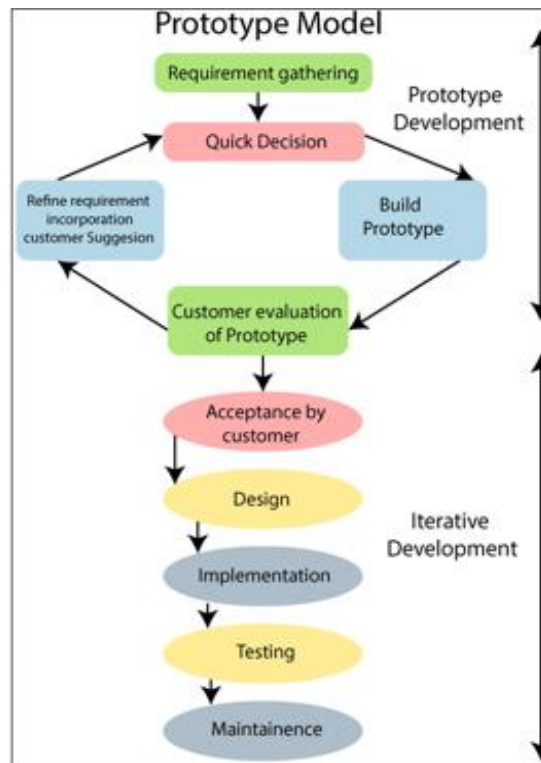
Fig 1: Prototype Model

Method and analysis which is performed in your research work should be written in this section. A simple strategy to follow is to use keywords from your title in first few sentences.

Step 1: Requirements gathering and analysis

A prototyping model starts with requirement analysis. In this phase, the requirements of the system are defined in detail. During the process, the users of the system are interviewed to know what is their expectation from the system.

Step 2: Quick design

The second phase is a preliminary design or a quick design. In this stage, a simple design of the system is created. However, it is not a complete design. It gives a brief idea of the system to the user. The quick design helps in developing the prototype. In this Project, The Data Flow Diagram is represented as Preliminary Design.

Step 3: Build a Prototype

In this phase, an actual prototype is designed based on the information gathered from quick design. It is a small working model of the required system.

Step 4: Initial user evaluation

In this stage, the proposed system is presented to the client for an initial evaluation. It helps to find out the strength and weaknesses of the working model. Comments and suggestions are collected from the customer and provided to the developer.

Step 5: Refining prototype

If the user is not happy with the current prototype, you need to refine the prototype according to the user's feedback and suggestions. This phase will not be over until all the requirements specified by the user are met. Once the user is satisfied with the developed prototype, a final system is developed based on the approved final prototype.

Step 6: Implement Product and Maintain

Once the final system is developed based on the final prototype, it is thoroughly tested and deployed to production. The system undergoes routine maintenance for minimizing downtime and prevent large-scale failures. The final application will be the required product.

IV.   SYSTEM REQUIREMENTS

1. Software:

a. Windows 7 and above

b. Xampp v3.2.2 and above

c. Web Browser (Firefox or Chrome)

2. Hardware:

a. A minimum of intel i3 processor

b. A minimum RAM capacity of at least 4GB

c. Hard Disk capacity of at least 256GB free space

3. Languages, scripts which will be used in web application:

a. For Frontend: JavaScript, html, CSS.

b. For Backend: php, MySQL

V.   PROPOSED SYSTEM

Client-server architecture is a shared computer network architecture where several modules on the client-side will send many requests and finally obtain services from the centralized server machine. The client machine will deliver a user-friendly interface that will help users to fire request services of the server computer and finally show your output on the client system. Servers will wait for requests from clients to arrive before responding. Ideally, it will provide a standardized transparent interface to modules on the client-side so that they will not need to be aware of the specifics of the system that is providing the service.
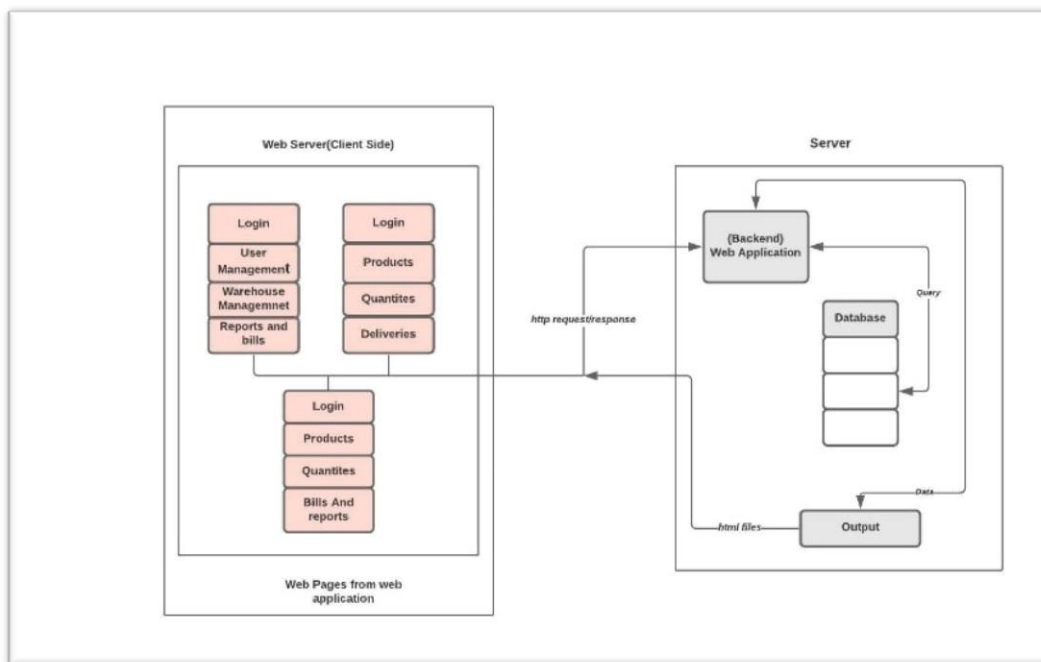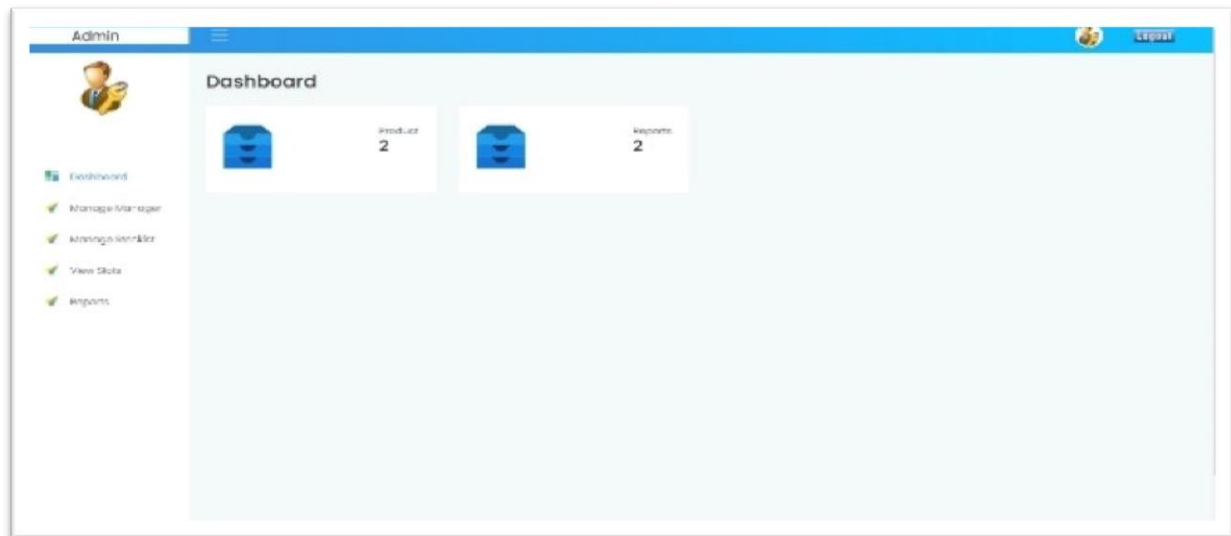
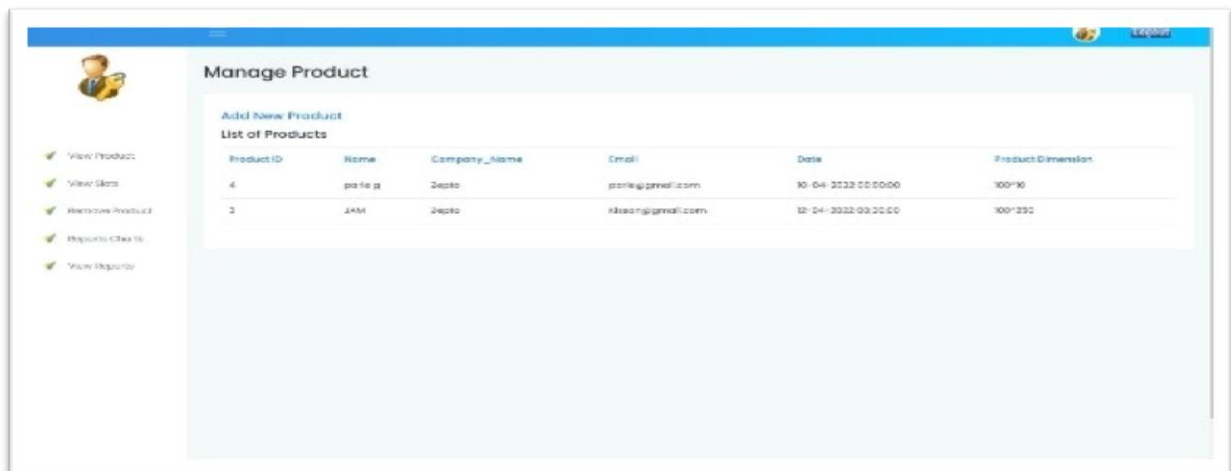

Fig 2: Architecture Diagram:

VI.   RESULTS
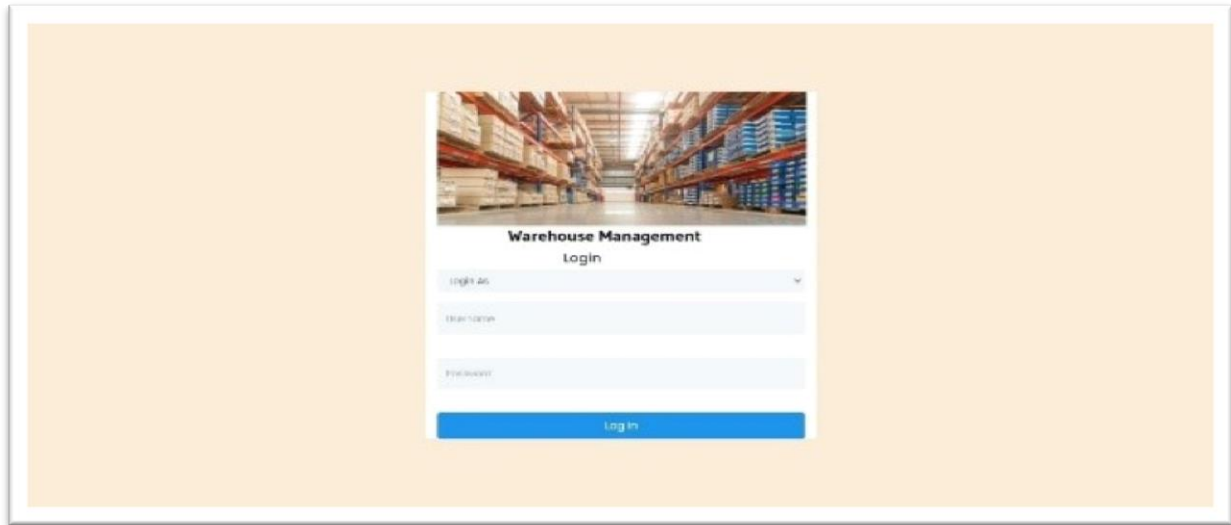
Fig 3: Result Page

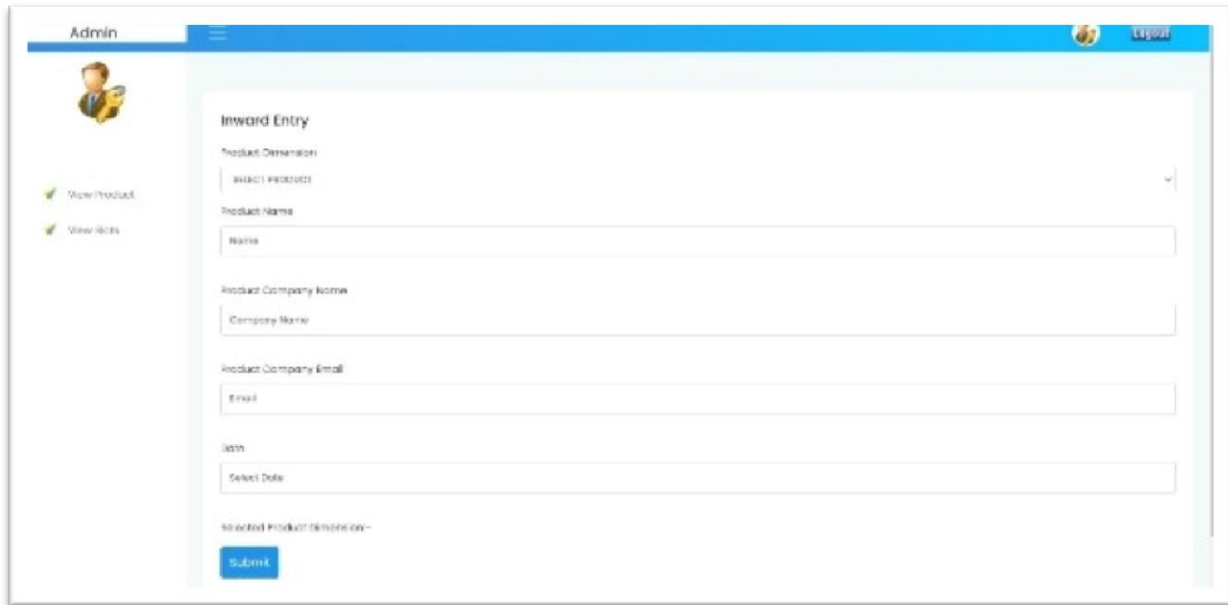**Fig 4:** Admin Dashboard

Fig 5: Manage Products

Fig 6: Inward Entry

Fig 7: Slot views

Figure 3 shows the Main Login Page of the system where Admin. Managers and Stockists can login in to their respective portals by selecting type of users. Figure 4 shows the Admin Dashboard where number of products and number of reports are visible to admin with other functions that he can operate. Figure 5 shows the Manage Managers portal where admin can view all the managers with their details and Add New Manager by adding their basic details. Figure 6 shows the Inward Entry Screen visible to stockiest where he can add new products in warehouse by adding their details and Figure 7 shows the Slot View where slots available in warehouse are shown in square boxes where green box represent the empty slots present in warehouse whereas red box represent the filled ones.

VII.   CONCLUSION

We conclude here that warehouse management is very important at warehouses as it reduces the time and required expenses. It also eases the work for workers as it keeps precise records of goods that are ready for shipment. Hence warehouse management system is an important and much-needed factor for all warehouses.

Warehouse Management is important for keeping costs down while meeting regulations. Supply and demand are a delicate balance and inventory management hopes to ensure that the balance is undisturbed. Highly trained warehouse management and high-quality software will help make warehouse management a success. The ROI of inventory management will be seen in the form of increased revenue and profits, a positive employee atmosphere, and an overall increase in customer satisfaction.

VIII. REFERENCES

[1] Jiang ZZ, Wan MZ, Pei Z, Qin XW – Spatial and temporal optimization for smart warehouses with fast turnover. (Jan 2021)

[2] S. Angel Raphella, S. Gomathi Nathan and G. Chitras" Inventory Management-A Case Study", International Journal of Emerging Research in Management and Technology, (June 2019)

[3] P.G. Matsebatlela and K. Mpofu," Inventory Management Framework to Minimize Supply and demand Mismatch on a Manufacturing Organization", International Federation of Automatic Control (Mar 2018).

[4] Sande, "Automated Warehouse Management System". Journal of Toronto, (April 2016).

[5] https://www.radley.com/mes-wms-solutions/warehouse-management-systems-complete-guide/

[6] https://www.vskills.in/certification/tutorial/warehouse-management-system-wms-3/