Inventory Management for an Organization

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Abstract—**Inventory Management System is software tool which is useful for the businesses required operating hardware , where store owner keeps the records of sales and inventory. Mismanaged inventory means disappointed customers, too much cash tied up in warehouses and slower sales. This project eliminates the paper work, human faults, manual delay and speed up process. Inventory Management System has the ability to track sales and available inventory, resources that tells the owner or it. When it's time to reorder and how much to purchase. Inventory Management System is a windows application developed for Windows operating systems which focused in the area of Inventory control and generates the various required reports.**

Index Terms—*Inventory Management System, Java Script, MongoDb, MVC architecture, NodeJs, PHP.*

I.INTRODUCTION

Compared to large companies with greater bodily space, in smaller companies, the products may match immediately to the inventory region as opposed to a receiving location, and if the enterprise is a wholesale distributor, the products can be completed merchandise in place of uncooked substances or components. The items are then pulled from the inventory regions and moved to manufacturing centers in which they're made into completed items. The completed items can be back to inventory regions in which they're held previous to shipment, or they'll be shipped immediately to customers. Inventory control makes use of numerous information to maintain music of the products as they circulate thru the process, which includes lot numbers, serial numbers, value of products, amount of products and the dates after they circulate thru the process. Almost 60% of coins is allotted for the inventory in an undertaking. Materials Management is recognized with arranging, securing, placing away and giving the correct cloth of proper quality, proper quantity at accurate location in opportune time if you want to co-ordinate and calendar the advent motion in an integrative direction for a mechanical endeavor. Stock Management is essentially the manner through which an affiliation is supplied with the goods and businesses that it desires to perform its dreams of purchasing, stockpiling and improvement of substances. Stock management frameworks are key to how companies music and manage inventories. Being capable of quantify inventory in an opportune and genuine manner is primary for having non-stop enterprise sports due to the fact inventory is often certainly considered one among the most important present day assets on an organization's accounting report. Stock is a rundown for merchandise and substances, or the ones products and substances themselves, held available in inventory through a enterprise. Bookkeeping inventory is regarded as an advantage. Stock management is needed at numerous regions internal an workplace or internal distinct regions of a deliver gadget to object the standard and organized route of technology against the arbitrary unsettling affect of arising quick on substances and stocks.

II.LITERATURE SURVEY

In the market, there are numerous inventory management systems. I've learned through my investigation that the most of them just provide a select few things. Others don't have a good user interface.

Sales growth is not a major focus of marketing strategies. Due to differing organizational structures, the customer satisfaction level is compromised because the customer management system and inventory management system cannot be integrated. The majority of them do not use the cloud computing concept, but we are working to create a system that works for everyone, not only large corporations or small businesses. The majority of them have significant operating costs and often expensive maintenance costs. Pay-per-use refers to our system.

III.PROPOSED METHODOLOY

The suggested system is a piece of software that eliminates the need for additional human record-keeping and report-generating time for small and mid range organizations. This application maintains the data in the cloud that is simultaneously accessible to all users. Managing historical data in a database is extremely simple. The employees can utilize this application with no special training. They may easily utilize the tool that reduces the number of manual hours needed to complete routine tasks, improving performance. The fact that the data is centralized makes it very simple to keep track of the various goods and stockpiles across all godowns. All daily transactions are simple to manage, and producing the necessary reports is simple. A centralized database helps to prevent conflicts and makes it simple to store historical data securely. a user-friendly GUI that doesn't need special training.
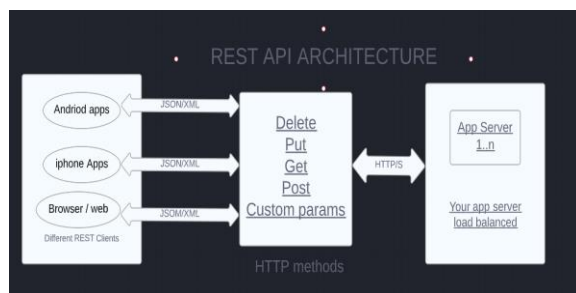
IV.ARCHITECTURE

Figure 1: REST API ARCHITECTURE

REST is for Representational State Exchange and API is for Application Program Interface. REST may be a program engineering fashion that characterizes the set of rules to be utilized for making web administrations. Web administrations which take after the REST building fashion are known as Serene web administrations. It permits asking frameworks to

access and control web assets by employing a uniform and predefined set of rules. Interaction in REST based frameworks happen through the Internet's Hypertext Exchange Convention (HTTP). A Tranquil framework comprises a client who demands for the assets and server who has the resources.
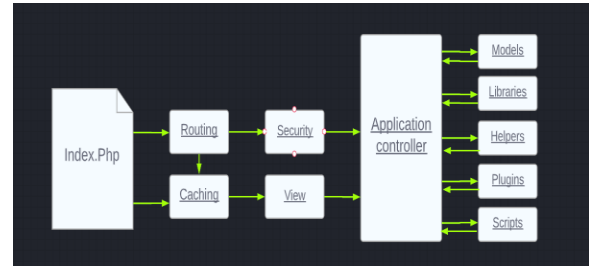
Data Flow Diagram

Figure 2: DATA FLOW DIAGRAM

Model-View-Controller (MVC) structure divides a program into 3 center cohesive additives: Model, View, and Controller. As a result, the abbreviation MVC. Each layout issue is created to deal with a positive utility enhancement perspective. MVC separates the industrial purpose and the creation layer. MVC became historically designed for laptop graphical person interfaces (GUIs). MVC structure in net innovation is presently broadly acknowledged for growing online programs in addition to bendy programs.
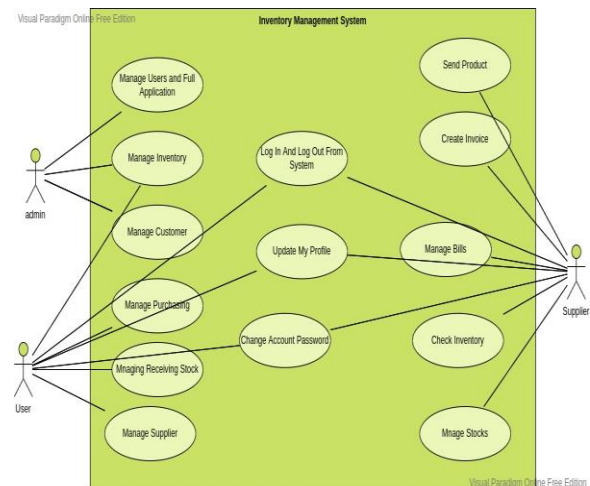
V.SYSTEM DESIGN

Use-case Diagram

Figure 3: USECASE DIAGRAM FOR IMS

Use case diagrams helps in gathering the system requirements including internal and external ones. Most of them are design requirements. Hence, when

a system is analyzed to gather its functionalities and requirements, use cases diagrams are prepared and actors are defined.

In the use case diagram the actors are users, admin, supplier, API server, in which admin can login to web application through the website and then he can add users, manage users and he can manage the whole inventory. Where the users added by the admin can manage purchasing the stocks and receiving the stocks. The supplier has access to the tracking system of the website.
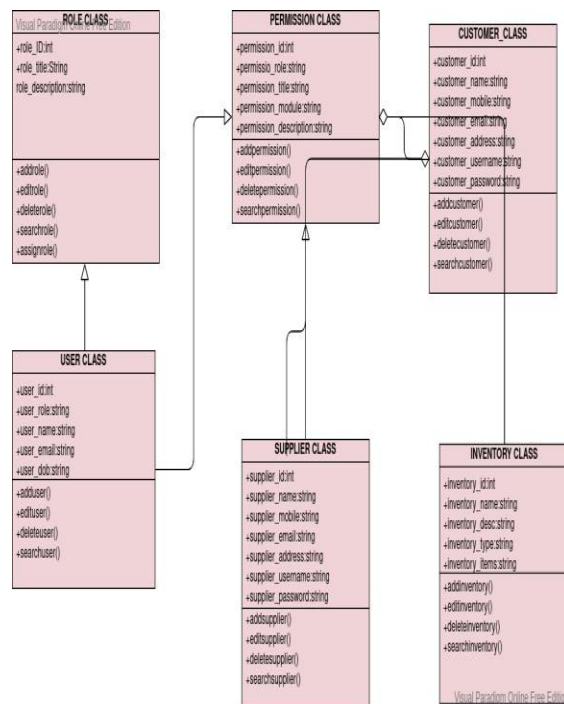
Class Diagram

Figure 4: CLASS DIAGRAM FOR IMS

A class diagram depicts the attributes and behaviors of a class, as well as the system's restrictions. Class diagrams are commonly used in the design of object-oriented systems because they are the only case diagram that can be immediately converted to object-oriented languages. In this diagram there are 6 classes who can manage the inventory of an organization.

Activity Diagram
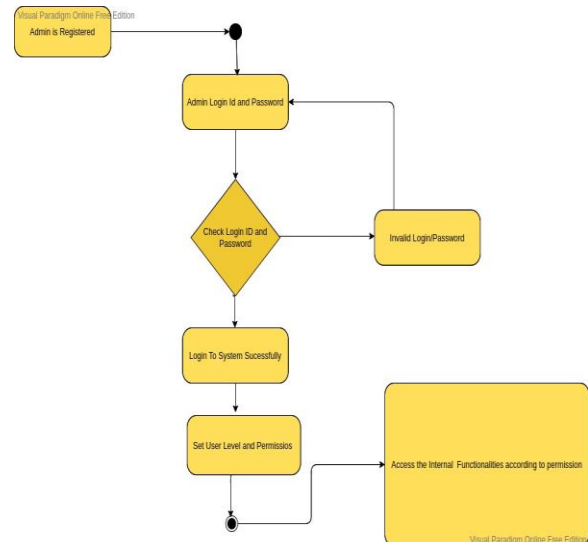
Figure 5: ACTIVITY DIAGRAM FOR IMS

Here is the workflow diagram of activity diagram of the user, if the users doesn't exist in the database the user has to register with the organizational Inventory website and the activities /process of the user has the access to inventory and can view the available stocks and can order the stocks that are insufficient for a day.
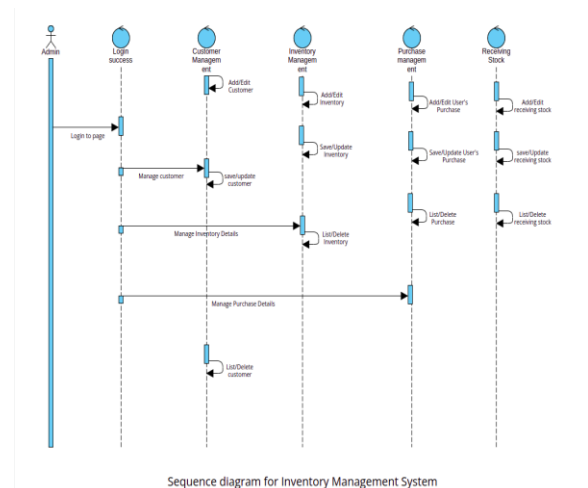
Sequence Diagram

Figure 6: ACTIVITY DIAGRAM FOR IMS

sequence diagram depicts the sequence of actions of the user, admin, supplier based upon the actions sequence, we have made a sequence diagram.

VI.SYSTEM IMPLEMENTATION

Figure 7 : MongoDB Inventory Database schema

With the help of MongoDB inventory database we store the inventory data used for analysis into the inventory database and retrieve form the database whenever needed.

We can store hybrid type of data in MongoDB where there is no predefined schema like SQL to store in the database.
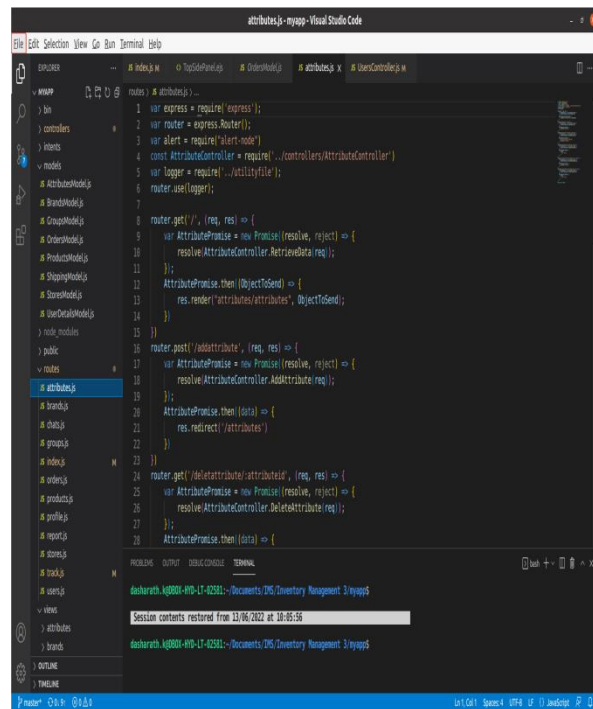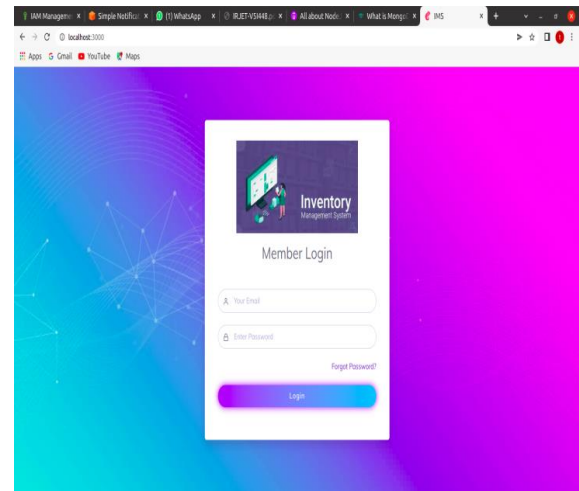

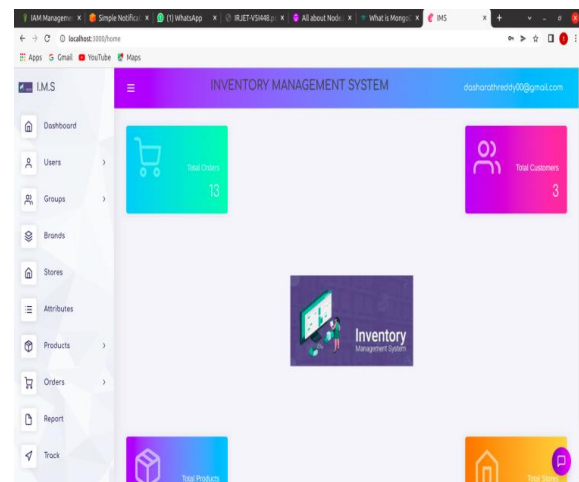Figure 8 : Visual Studio Nodejs Code Structure

Sample Nodejs Code structure of user post in our application. We are using CSS for styling our web-

pages and different concepts like express , expressJS, nodeMailer.
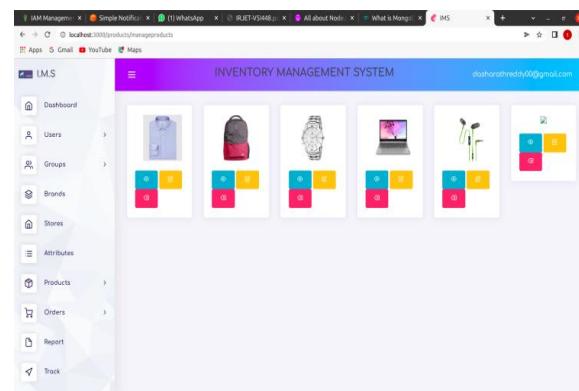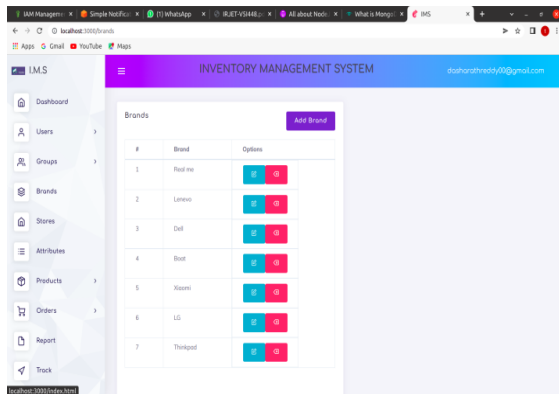
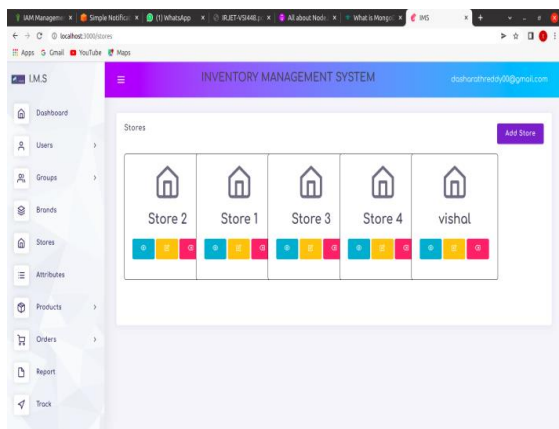## VII.RESULT AND OUTPUTS

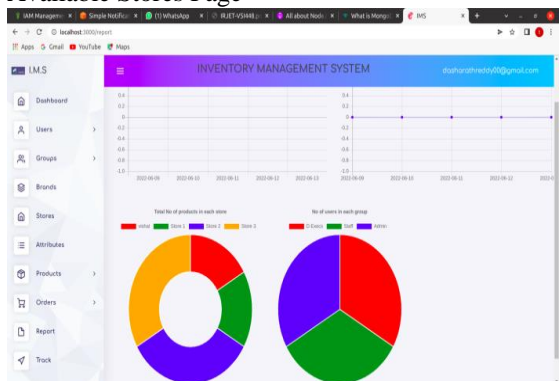

User Login page

User Home page

Available resources page

Available brands page

Available Stores Page

Reports Page

VIII.CONCLUSION

This paper presents complete solution to inventory management system for small and mid range organizations. This application built helps in cost savings. The application increases the efficiency of the organization. It provides organization of warehouses. Provides up-to-date and real-time data on inventory levels is and benefit of the inventory management system. With the restricted user rights, company admins can allow many employees to contribute to inventory management. They can grant employees enough data access for tasks such as receiving products, making orders, transfer products, and perform other tasks without compromising company security. This can speed up the inventory management process and save admins time.

REFERENCE

[1] https://docs.microsoft..org.com/en-us/aspnets/mvc

[2] https://www.ibm.org.scom/docs/en/inventory-visibility?topic=apis-rest-api-documentation

[3] https://developer.mozilla.org/en-US/docs/Web/JavaScript

[4] https:/www.geekforgeeks.org/what-full-stack-development?

[5] https://nodejs.org