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Industry 4.0 Based Live Inventory Tracking System

Prof. S. S. Shinde[1], Pratik Lohakare[2], Ganesh Karadkhele[3], Shubham Shete[4], Vaibhav Vaidya[5]
Smt. Kashibai Navale College of Engineering Pune

Abstract: Software called Inventory Management System is useful for companies who run hardware stores, wherethe store owner maintains track of sales and purchases. Poor inventory management results in dissatisfied customers, too much money being held in warehouses, and slower sales. The paper work is eliminated with this initiative, human error, manual delay, and process acceleration. A store owner can use an inventory management system to keep track of sales and available stock, as well as to determine when and how much to reorder. A Windows application called Inventory Management System was created for Windows operating systems with a focuson inventory control and the ability to produce all the necessary reports.
Keywords: Inventory Management

I. INTRODUCTION

Inventory management software is used to keep track of inventory levels, orders, sales, and deliveries. It can be utilised to create a work order, bill of materials, and other production-related papers for the industrial sector. To prevent product overstock and outages, businesses utilise inventory management software. It is a tool for organising inventory data, which was previously typically kept in hard copy or spreadsheet form. Our objective is to develop a replenishment strategy that is more effective in light of shifting market conditions and maximises revenues across the supply chain. Updates and constant tracking will be provided. A reliable system will give you a centralised picture of the stock across every sales channel, helping you keep track of your inventory. creates stock across sales channels, cutting costs. reduces expenses by creating stock reports for inventory analysis. Reduce the amount of time spent managing inventory by maintaining records. analyses data trends to manage planning and forecasting.

A. Problem Statement

To properly track the items and lower logistical loss. The profitability and success of the company are significantly impacted by inventory costs. The identification of critical success criteria and making the appropriate judgments at the appropriate time are prerequisites for inventory management and its optimal decisions. To maximise the outcomes of the inventory function in a dynamic market context, it is essential to concentrate on decision-making and the factors driving decision- making. The survey method can shed light on the variables, many of which contain biassed data. The dependability of theparameters used as important variables in decision-making can be improved by testing the factors that influence invention decisions using scientific methodologies. Consequently, the current study is concentrated on two aspects, namely the identification of variables influencing inventory optimization among SMEs in the steel sector through a structured and unstructured questionnaire, the grouping of these variables into two sets as internal and external variables, and optimizationby combining the information for the best decision.

II. LITERATURE SURVEY

The loss in logistic for Fastmoving Consumer Goods (FMCG) has been very high since they have entered into big markets. Hindustan Coca-Cola Beverages' (HCCB) losses from 2016 to 2018:

According to documents filed with the Registrar of Companies, it had a loss of Rs. 2.33 billion in 2016–17.

In 2017-18, a loss of Rs. 1.18 billion was reported. https://www.business-standard.com/article/companies/coca-cola-s- bottling-arm-reports-loss-for-2nd-straight-year-at-rs-1-18-bn-118112701080_1 PepsiCo midlife crisis:

According to its RoC filings, PepsiCo India reported a loss of Rs280 crore as opposed to a profit of Rs17.6 crore the year before. https://www.livemint.com/Companies/V5SxXWA0oicnJFmAXNZaqJ/PepsiCos-midlife-crisis-in- India.html Amazon Seller Services,, faced the loss of Rs. 5,685 crores during fiscal year 2018-19.

https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/amazon-indias-e-comm-arm-narrows-fy19-loss-to-rs- 5685-crore/articleshow/71796214.cms

According to regulatory documents filed by Flipkart, which were sourced from business intelligence platform Paper.vc, thecompany reported a net loss of Rs 3,836 crore as opposed to Rs 2,063 crore in the prior financial year.

https://www.business-standard.com/article/companies/flipkart-india-s-losses-increase-85-91-to-rs-3-836-cr-income-rises-42119102800862_1.html#:~:text=Flipkart%20India%20Private%20Limited%20reported,business%20intelligence%20platform%20Paper.vc

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III. DESIGN & ARCHITECTURE

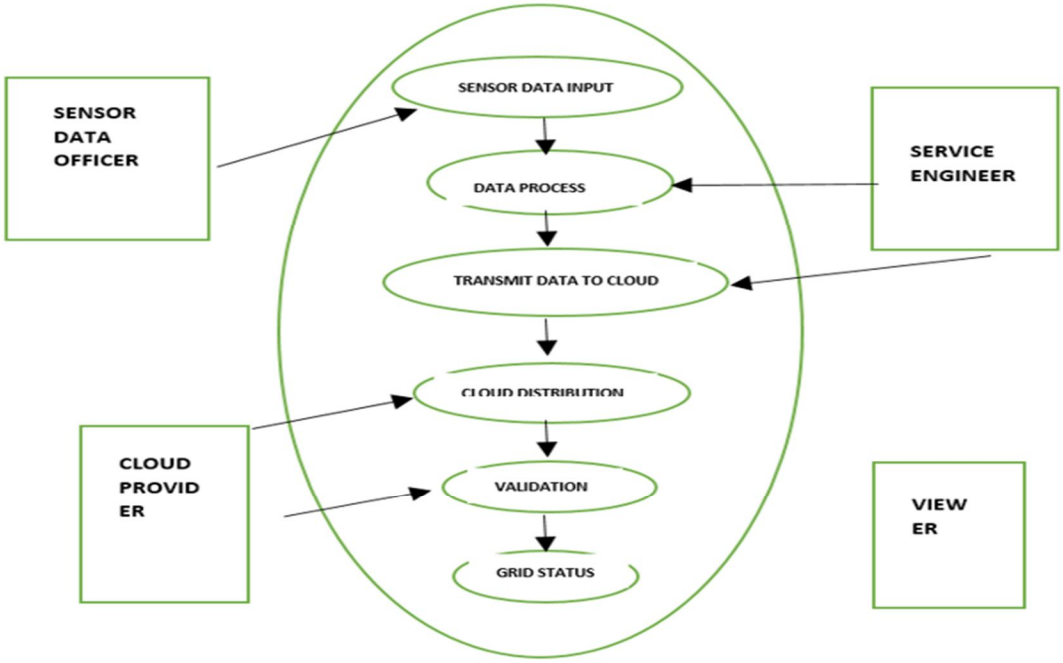
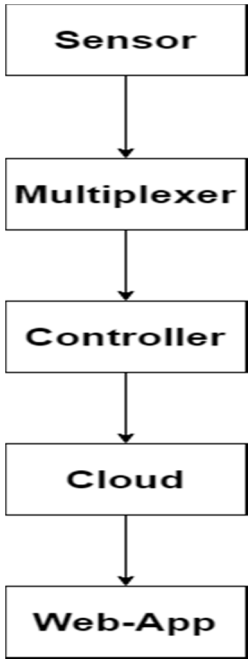


Fig: Architecture

1) *Sensor Data Input:* The output of a device that detects and reacts to a certain sort of input from the physical worldis known as sensor data. The output could be utilized to direct a process or by another system. Almost any physical element may be found with sensors.
2) *Data Process:* The computer-assisted processing of data. Data flow through the CPU and memory to the output device, formatting or other data preparation, and the conversion of raw data to machine-readable form transformation Data processing can be described as the use of computers to carry out specific operations on data.
3) *Cloud Distribution:* A next-generation value-added distributor, Cloud Distribution specializes in introducing cutting-edge, disruptive, cloud-first cyber security, networking, and data center technologies to the market. Maintaining the value of distribution is something that Cloud Distribution is enthusiastic about.
4) *Validation:* Establishing documentary proof that a procedure, process, or activity used in testing and then productionmaintains the necessary degree of conformity at all stages is known as validation.
5) *Grid Status:* The grid manager shows the general grid state as well as the status of each grid service. The most crucial grid members or services are represented by the grid status. The overall grid status is green when each member of the grid is functioning properly.
6) *Service Engineer:* The design, installation, and maintenance of mechanical, electrical, and public health safety systems are just a few of the responsibilities that service engineers have both within and outside of buildings.
7) *Cloud Provider:* A third-party business that offers cloud-based platforms, infrastructure, applications, or storage services is referred to as a cloud provider.
8) *Warehouse Officer:* The supply chain team and process rely heavily on the warehouse officer. In order to assist initiatives and programs, he or she is responsible for the effective receiving, storage, and distribution of a variety of goods, including food, clothing, healthcare products, manufactured goods, and household items.

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A. Block Diagram



1) *INDEX.HTML:* The default homepage is INDEX.HTML. The most frequent name for the default page displayed on a website when no other page is supplied when a visitor requests the site is the index.html page. In other words,index.html is the name of the website's home page.
2) *CDN:* By bringing web material closer to users, a content delivery network (CDN) is a collection of geographically dispersed servers that speeds up the delivery of web content. Caching, a technique that temporarily saves copies of files, is used by data centres all over the world so that you can access internet material through a web-enabled device or use a local server to speed up your browser. Web pages, pictures, and video are cached by CDNs on proxy servers close to your actual location. Without having to wait for content to load, you may do things like watch a movie, download software, check your bank account, post on social media, or make purchases.
3) *Server:* A server, network computer, software application, or other gadget that responds to client requests. A web server is a computer that uses the HTTP protocol to send web pages to a client's computer when the client requests them on the internet, for instance. A print server controls one or more printers on a local area network and prints files that are sent to it by client computers. Additional examples of servers include file servers, which store and retrieve files for clients, and network servers, which control network traffic.
4) *Controller:* The Controller Area Network (CAN), a different kind of serial communications protocol, was created by the automobile industry to enable several electronic components on a single vehicle to communicate crucial control data.
5) *Values for the LDR Grid:* An LDR is a part whose resistance (variable) varies according to the amount of light it receives. As a result, they can now be used in light sensor circuits. When there is no light, the LDR has a high value. Depending on the kind, the LDR's resistance value varies. This time, it's around 10,000. As the light intensity rises, the resistance decreases, causing the current to rise (according to Ohm's Law), which raises the voltage at A0 (Va0).

IV. ACKNOWLEDGMENT

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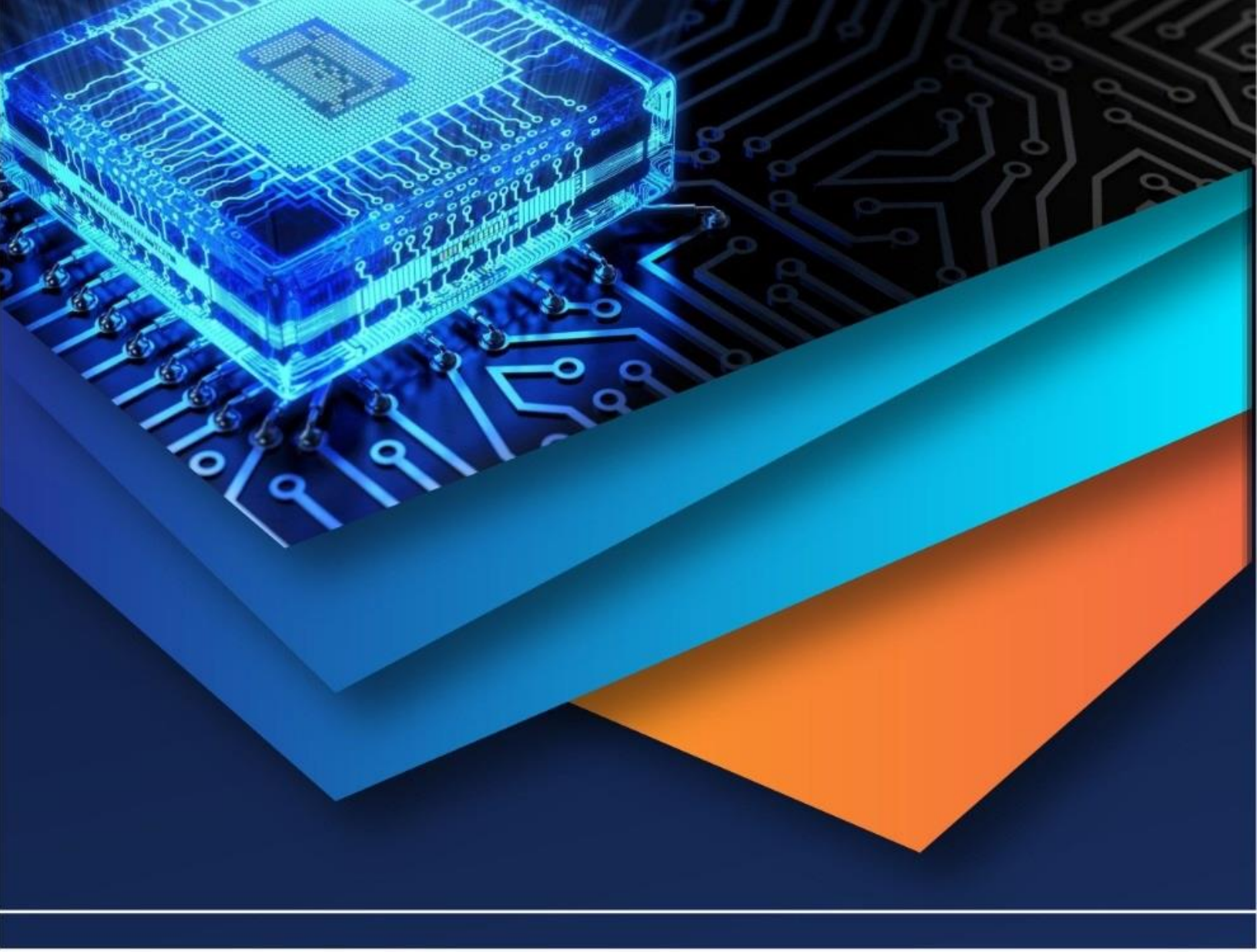
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