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Live Inventory Tracking System Using IOT

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Abstract: Inventory Management System software is important for organisations that operate hardware stores, where the store owner keeps track of sales and purchases. Poor inventory management leads to disgruntled customers, excess money in warehouses, and slower sales. With this initiative, paper work, human mistake, manual delay, and process acceleration are all avoided. An inventory management system can help a store owner keep track of sales and available goods, as well as calculate when and how much to repurchase. Inventory Management System is a Windows application for Windows operating systems that focuses on inventory control and the ability to generate all essential reports.
Keywords: Inventory Management

I. INTRODUCTION

Inventory management software monitors inventory levels, orders, sales, and deliveries. It can be used to generate a work order, a bill of materials, and other industrial-related documents.

Businesses use inventory management software to prevent product overstock and outages. It is a tool for organising inventory data, which was traditionally recorded on paper or in spreadsheets. Our goal is to create a replenishment plan that is more effective in the face of changing market conditions and maximises revenues throughout the supply chain. Regular updates and tracking will be provided. A dependable system will provide you with a consolidated view of your inventory across all sales channels, allowing you to maintain track of your inventory. produces inventory for several sales channels, cutting costs. lowers costs by producing stock reports for inventory analysis. Maintaining records allows you to spend less time managing inventory. data patterns are examined in order to manage planning and forecasting

A. Problem Statement

To keep track of the items and reduce logistical loss. Inventory costs have a substantial impact on the company's profitability and performance. Inventory management and optimal decisions require the identification of essential success criteria and the making of relevant judgements at the appropriate moment. It is critical to decrease expenses in order to maximise the outcomes of the inventory function in a changing market situation. reduces expenses by producing stock reports for inventory analysis. You can spend less time maintaining inventory if you keep records. Data patterns are studied in order to manage planning and forecasting so that decision-making and the factors influencing decision-making can be prioritised. The survey approach can provide insight on variables that contain biassed data. The dependability of the parameters employed is critical. Variables in decision-making can be enhanced by applying scientific approaches to test the factors that influence invention decisions. As a result, the current study focuses on two aspects: identifying variables influencing inventory optimisation among SMEs in the steel sector using a structured and unstructured questionnaire, categorising these variables as internal and external variables, and optimising by 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

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According to regulatory documents filed by Flipkart, which were sourced from business intelligence platform Paper.vc, the company 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

III. DESIGN & ARCHITECTURE

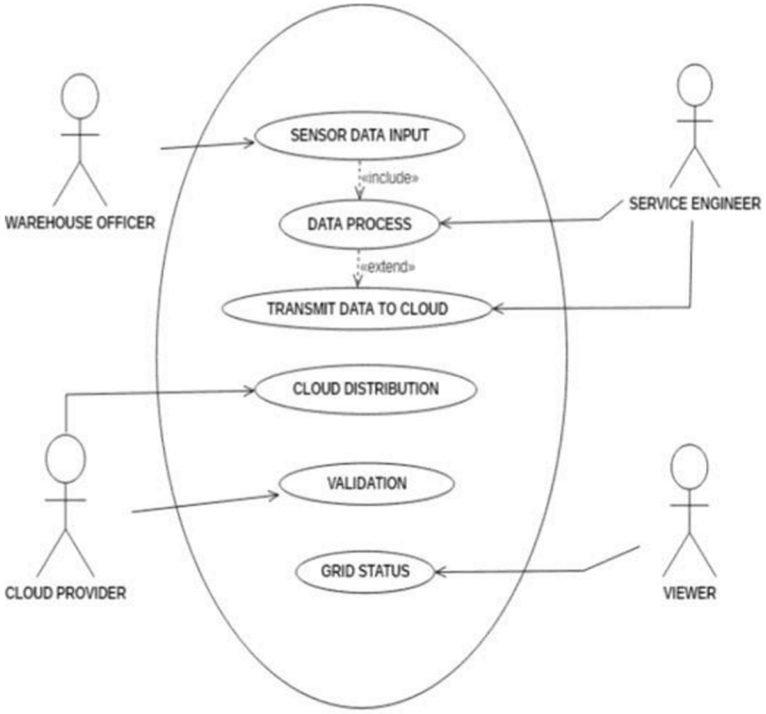

Fig: Architecture

1) Sensor Data Input: The output of a device that recognises and responds to a particular kind of physical world input is referred to as sensor data. The output could be used to control another system or a process. With sensors, almost any physical element may be located.

2) Data Processing: The handling of data with computer assistance. Flow of data from the CPU and memory to the output device, formatting or other data preparation, and transformation of raw data into machine-readable form Data processing is the act of performing specified actions on data using computers.

3) Cloud Dispersion Cloud Distribution is a next-generation value-added distributor that specialised in bringing cutting-edge, disruptive, cloud-first networking, data centre, and cyber security technologies to market..

4) Grid condition: The grid manager displays both the overall grid state and the current condition of each grid service. The grid status represents those grid members or services that are most important. When every component of the grid is operating correctly, the overall grid status is green.

5) Service engineer: Among the duties that service engineers have both within and outside of buildings are the design, installation, and maintenance of mechanical, electrical, and public health safety systems.

6) Cloud provider: A third-party company is referred to as a cloud provider if it provides cloud-based platforms, infrastructure, applications, or storage services.

7) Warehouse officer: The warehouse officer plays a critical role in the supply chain team and process. He or she is there to support projects and programmes. .

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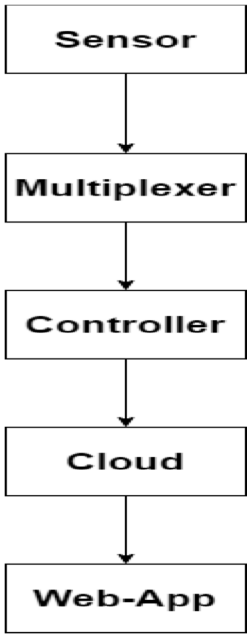
Block Diagram



8) INDEX.HTML: INDEX.HTML is the homepage by default. The index.html page is the most popular term for the default page that is shown on a website when no other page is provided when a visitor requests the site. In other words, the home page of the website is called index.html.

9) CDN: A content delivery network (CDN) is a group of geographically scattered servers that expedites the delivery of web content by bringing it closer to users. Data centres all over the world employ caching, a method that saves copies of files temporarily, so you can access online content through a web-enabled device or use a local server to speed up your browser. CDNs cache web pages, images, and video on proxy servers close to where you are actually at. You may view a movie, download software, check your bank account, post on social media, and make purchases all without having to wait for the content to load.

10) Server: A device that answers to client requests, such as a server, network computer, software programme, or other apparatus. When a client requests web pages over the internet, for example, a web server is a computer that uses the HTTP protocol to transfer those web pages to the client's computer. A print server manages one or more local area network printers 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.

11) Controller: To allow several electronic components on a single vehicle to share vital control data, the automotive industry developed the Controller Area Network (CAN), a separate type of serial communications protocol.

12) The LDR Grid values An LDR is a component whose variable resistance changes in response to the quantity of light it receives. They can now be utilised in light sensor circuits as a result. The LDR has a high value when there is no light. The LDR's resistance value varies according on kind. It is approximately 10,000 this time. According to Ohm's Law, when the light intensity increases, the resistance reduces, increasing the current and, as a result, the voltage at A0 (Va0).

IV. SYSTEM REQUIREMENT & SPECIFICATION

A. *Hardware Requirement*

1.	8GB RAM
2.	5GB HDD
3	Android Mobile

B. Software Requirement

1.	C .NET, ASP.Net
2.	MS SQL SERVER
3.	Android Studio
4.	Visual Studio
5.	IIS

C. Technologies Used

- MEAN stack for web and UI applications
- Third party IoT cloud applications for Android app
- Arduino IDE
- C Language for firmware

In this system two android application are developed such as user application and driver application.

1) User App-

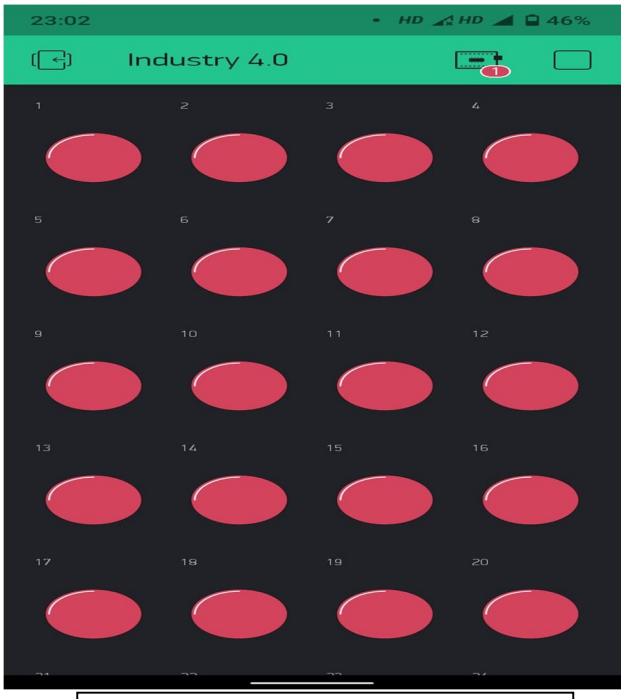
a) Log in- User log in on system.
b) Register -User register on app.
c) Home – Rearrangement of LDR Objects
d) Change of the LDR Colour As its Changing incident light intensity on hardware

2) Admin Panel

Admin is able to add New Module, Supervise all the services if they are working fine.

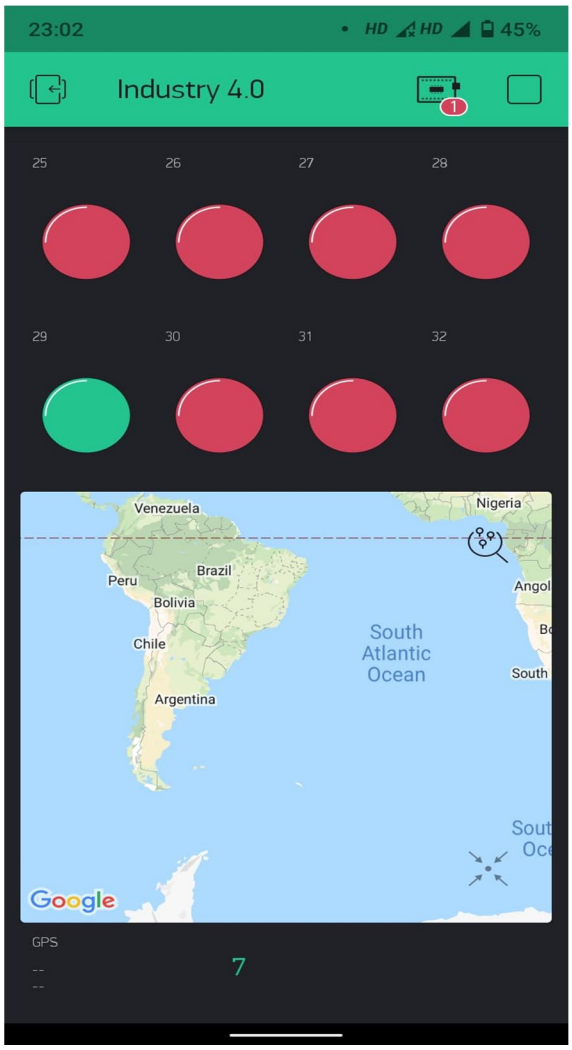
V. RESULT

A. Output Diagram 1



OUTPUT 1

B. Output Diagram2



OUTPUT 2

VI. CONCLUSION

In conclusion, a live inventory tracking system using LDR (Light Dependent Resistor) sensors offers numerous benefits for businesses. By utilizing LDR sensors, the system can accurately monitor and update inventory levels in real-time, ensuring accurate stock management and minimizing errors. The LDR sensors detect changes in light intensity, enabling the system to track the presence or absence of items on shelves or in storage areas

VII. ACKNOWLEDGMENT

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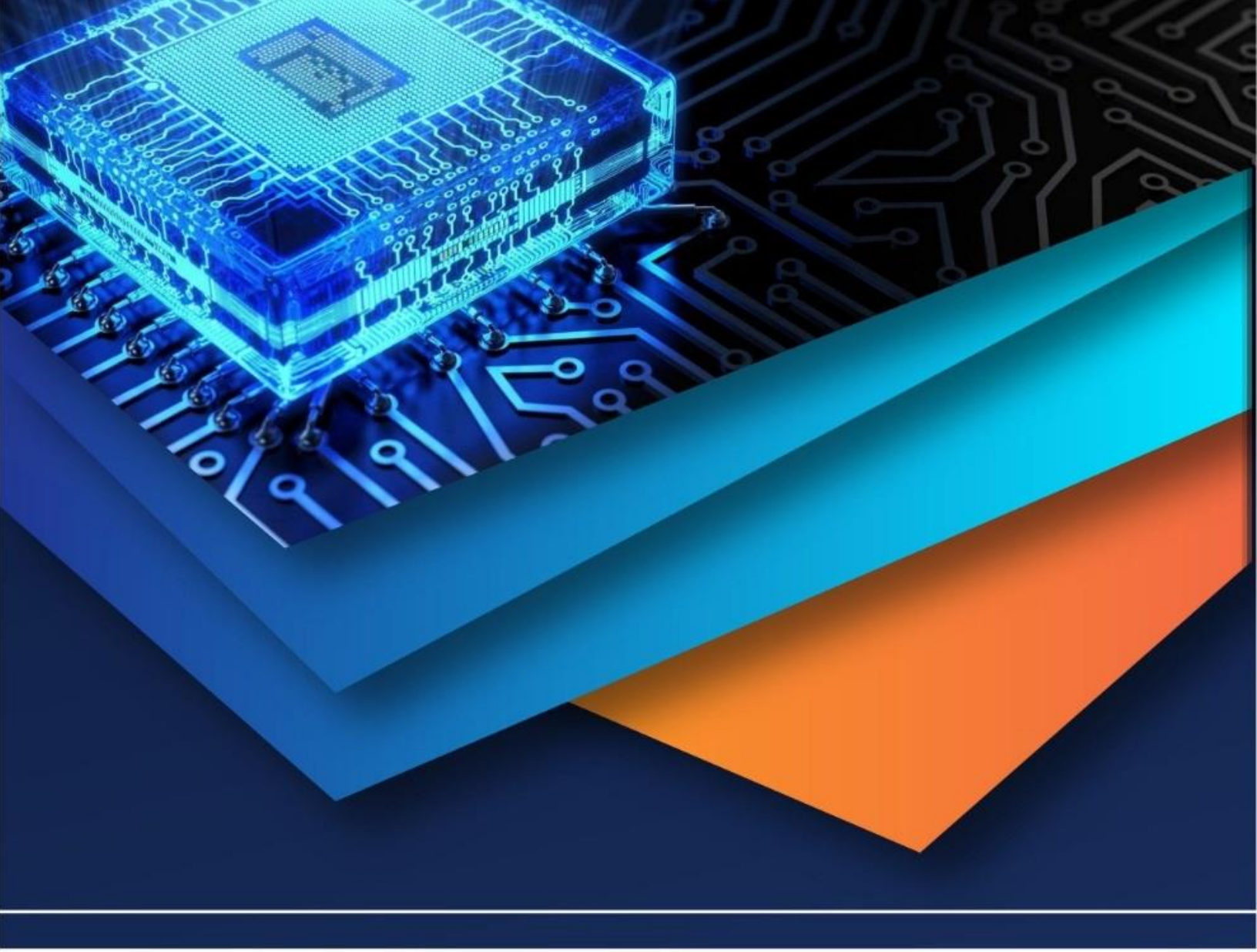

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