

# *Design and Implementation of a Store Management System*

G Divya Jyothi<sup>1</sup>, K Navya<sup>1</sup>

<sup>1</sup>Department of Computer Science and Engineering

MLR Institute of Technology

Hyderabad, Telangana

Email: [divyag.1605@gmail.com](mailto:divyag.1605@gmail.com)

**Abstract**—In our day to day activities we are facing the problem like “out of stock” situation when we visit a super market or any other marts. Smart Store Management is designed to monitor the daily inventory, out-of-stock, sales take-up, and other important data available from stores or outlets. Empty shelves in the stores frustrate customers and lead to sales losses for manufacturers and retailers. Customers show little tolerance for these so called “out of stock situations”. This leads to a 6 to 24% loss in retailer revenues. The store management identifies and monitors items in the shelves and automatically alert retailers when it's time to restock. The manual process involving collecting data will be replaced by automation and companies can get data in real time with no manual intervention and encoding.

**Keywords**—Shelves monitoring; SMS; Store management; RFID

## I. INTRODUCTION

Store management system will keep track of the inventory or an item in a retail market is one of the most feasible solutions to this retail in store challenge. The store management system will be benefited both for the customers shopping and the retailers selling experience. The store management will help to check the items and inventory in the shelves in the stores and the store executives will refill the items or inventory in the shelves if it is empty. It intimates to the store people about the products demand and out of stock situation. If the shelves are empty without products then it will intimate to the store manager to fill the shelves with the products. Digital transformation will rule the innovation in the retail industry. E-retailers are motivating the shoppers with ‘anywhere any time’ shopping, quick delivery, special offers, easy returns etc. and it is a growing threat to the super marts unless they adapt to the technology of the digital world. Apart from these advancements, the shoppers will expect the demand for more efficient, retail shopping experiences is ever increasing. Store experience by enabling innovative technologies like store management system in retail.

Compelling stock administration is basic in overseeing costs, measuring shrinkage and enhancing the client shopping knowledge in retail. With store administration framework innovation, retailers would auto be able to track the loaded products and ensure there is surplus stock to abstain from being “out of stock”. Constant stock administration empowers retailers to spare time, settle on educated choices and upgrade

in-store deals. Store administration framework empower constant and precise administration of stock information to engage retailers to advance the in store deals with the auspicious filling of stocks, survey of things and so on.

Stores like Best Buy, Target and Lowes are additionally progressively utilizing robots to screen and control stock. These robots can diminish shrinkage and enhance stock precision by dispensing with a component of human mistake. So also RFID chips can enable retailers to keep up “brilliant racks” which can recognize when stock is low or consequently change item cost for instance as staple things are going to lapse, or as a feature of a dynamic estimating system.

Store management system enables the business owners to take more informed decisions. By keeping a real time tracking on what products are being taken from the store shelves and what is remaining. The store people have to take analysis of data about items which are moving faster and to maintain stock in the store so that it reduces the burden of filling the items of slow moving.

## II. RELATED WORK

Issues that arise in retail store like out of stock are a major concern for consumers packaged goods and retailer organizations. They lose billions of dollars every year. If items of interest are not available on the shelves, most of the customers buy from somewhere else and others buy a different brand. These weight sensors reliably tell the back-end framework about the current amount of things on the racks. “These wireless use raspberry pie 3 and it monitors the shelf it alert the store associates when product levels are running low. I will also trigger the back end system about the items are getting less in a particular shelf. “The store administration gives retailers’ different methods for enhancing their client benefit, expanding deals and decreasing truck surrender to a vast degree.”

Store administration framework arrangement empowers retailers to remotely keep a track inside the store. The store administration framework capacities of shrewd racks help in rapidly distinguishing and settling issues inside the store if any before it impacts the clients. Accessibility of stocks when clients request it is basic for any retail locations .store administration framework empowers computerized following

of stock accessibility and educates retail location directors if the things are coming up short on stock. Cross and up offering ordinarily happen when there is a deficiency of items that clients are searching for. On the off chance that the retailers are as of now mindful of the out of stock things with store administration framework, they can offer clients better or correlative items contrasted with what they are as of now inspired by. stores should be worked in disconnected mode additionally on occasion. Notwithstanding when there is an information disengage, store administration framework will work in disconnected situations moreover.

### III. EXISTING SYSTEM

The present savvy hold administration innovation stores the information in cloud or in another outer gadget. The greater part of the present hold administration innovations are finished by utilizing audino. With the above innovation it builds work bourdon on the retailers and in a few times it diminishes the effectiveness of the clients and it prompts deals misfortune and with the current framework we have to check each time for restock the things.

### IV. PROPOSED SYSTEM

Store administration framework diminishes the code and work bourdon on the retailers, it furnishes coordinate stockpiling gadget with the assistance of the raspberry pie 3. This store administration framework ceaselessly screens and it consequently gives ready when it times to restock the items or the check of items is getting diminished. Clients indicate little resilience for this supposed "out of stock" circumstance. To conquer this we are presenting store administration framework. The store administration framework can be enormously gainful both for the clients shopping background and the retailers offering knowledge. The store administration framework idea will empower the stock and the store administrators to refill stocks from stock room as they get drained from the store rack.

- 1) More proficient.
- 2) Exceedingly exact.
- 3) It requires less space when contrasted with existing frameworks.
- 4) Ease.
- 5) Profoundly adaptable.
- 6) Simple to incorporate.

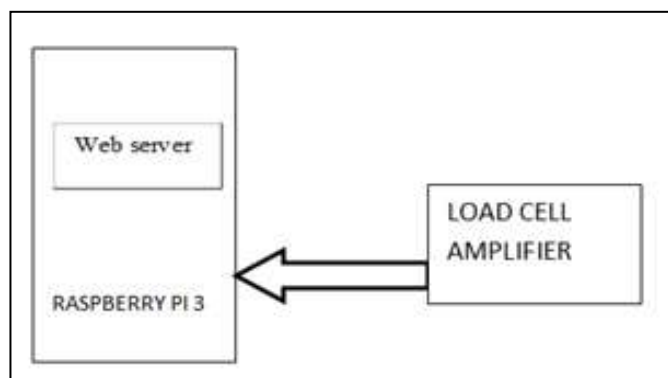


Fig. 1. Architecture.

In fig 1,the IoT specialist is the center piece of this design since it oversees web server information, SMS order, GSM module associations and all learning based procedures.

**Web Users:** The web clients are average citizens, this design gives them to know the status of the gadgets . The client can send summons through any web empowered gadgets like PC, Tablet, iPOD, advanced cells or any WAP empowered gadgets.

**Web Server:** The web server continues invigorating the information to the web customer. At whatever point the client changes the status or gives any information, this will be refreshed in the web server inward database then the IoT operator will deal with the normal procedure in light of the information.

### V. RESULTS AND DISCUSSION

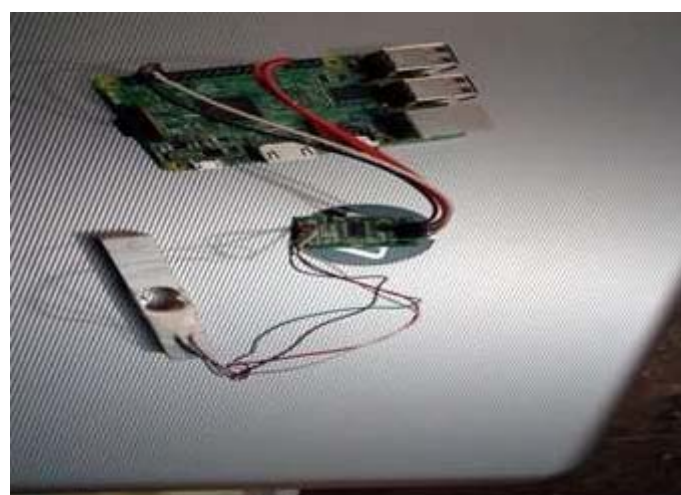


Fig. 2. Working Model of Store Management system

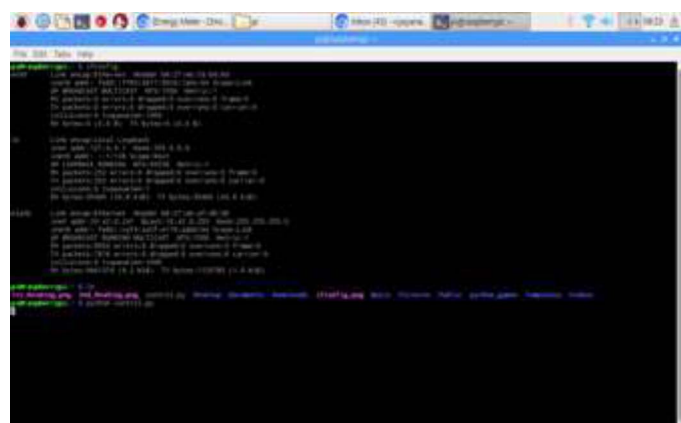


Fig. 3. Control.py command is run to execute the code

In Fig 2,The load cell and amplifier is connected to raspberry pi, the load cell will check the load available in the shelf, load details will be sent to raspberry pi to store the details. In Fig 3, we have to install NOOBS software and we have to write python code for raspberry pi and execute the code.

