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Product Price Comparison with the System Database by Using Google Vision and Raspberry Pi

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sPRODUCT PRICE COMPARISON WITH THE SYSTEM DATABASE BY USING GOOGLE VISION AND RASPBERRY PI

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***Abstract*---- In a modern supermarket many product like groceries, fresh product, generic products and products in promotional packs etc. are varying the price from day to day comparison. Like Groceries are when it comes to brand manufactures are easy to identify the product price which corresponds to what. Likewise with the help of google vision and raspberry pi to identify the stock market product price with the help of QR code scanner to generate the price day to day. By using raspberry pi automatically will generate the new price of the product with the help of WiFi network connection. The Robot will connect to raspberry pi and google vision to identify the product price and generate the price of the stock market product price.**

Keywords: Stock market, Google vision, Raspberry pi, WiFi Network, database.

I. INTRODUCTION

In Future environment supermarket catalogues are already mentioned are having infinite quantities of products are available with different brands and size of the product. One of the most important thing is the price comparison of super market and stock market. For mostly the shipping product like one place to another place the cost of the price is very low in one place, buy that product and sold here for high rate. So here we can see the financial marketing of price comparison. In this we can have the price monitoring device is the key to update the new price in the digital monitor. This device will not check only the price of the product but also the expiry date, manufactured product date etc. This robot will start functioning early in the morning before the shop opens. While the products QR code itself it displays the quality and price of the product. This robot will surrounds each and every row and column in the supermarket to scan the price and QR code in the product. By this itself gives the intimation about the about the product price updation.

II RELATED WORK

In this modern online shopping system (OSS) are very rich and very easy to identify the products prices in online. It is based on fully lucene that is in library information management crawling in full text research library. This itself will improve that shopping efficiencies are flexible to the customers [1]. In the e-commerce system many business are privileged to this category. The price comparator will check the price and compared the price. The network analyze and simulation methods are implemented to e-commerce price data's are from e-shop websites [2]. In European countries the e-shoppers are have the no of online retailers. It nearly 645000. In this they compare the product price to other product price to adjust the price to the best price for the specific product to gain the customers. Here they will be automatically identified the product price from e-shop websites [3]. This e-commerce will leads many drawbacks of the different website will have same product with different prices. They will spend some extra money to the retailers with delivery charges and tax. Till in Bangladesh there is no price comparison tool is available and then only they designed the (upoma) that is comparison. It will compare the prices, products and titles are written English, Bangla and transliterated Bangla. It will be updated in every 12 hours [4]. Nowadays the price comparison sites are recently been increasing the popularity. But also many price comparison sites are faced many problems. The linguistic product clusters are varying the price ratings in convenient manner [5]. E-commerce is nowadays is most important buying source for buying products. They are invented many tricks to attract the customers for buying the products. This web mining are more difficult to choose the best product price. Want the best deals of good product this web mining tool of e-commerce is used [6]. However the food supply chain products are following one by one to trace the food items starting from the raw products that is cultivation products to customers will the ready packets till this process it will be monitored by the blockchain concept. Each and every product as to update in blockchain. Blockchain is a type of legendry to keep the information very safe the encryption and decryption process will done here. Nobody will take the information from blockchain. If the customers will buy the product in online he/she will track and trace the product from where to what like that all information we can able to collect. By seeing this we can able to eat safely and with no fear, there will be no ill borne disease will form [7]. In North America there will be more than $200Billion mark of shopbots such as Yahoo etc. They will gather the price and products full information and compare the cost. Like that the shopbots are increasingly the online shopping merchants. Many shoppers are collect the price list for future price rationalization. Many shoppers like Amazon, eBay, flip kart are as online price comparison collector tool will handled. Based on the tool only they will compare the product like they will prefer offer to the product [8]. This PCW will be increasing the price for customers for both shoppers and non-shoppers. Every product as the price for profitable. For that they are inventing the PCW as to compare the price with numbers. There full process will

run in growing industry. This PCW are very famous in many countries. This concept are invented for gas and electricity [9]. The price comparison for e-switching Behavior that the website uses the usefulness of ad and their customers experience to evaluate the price comparison with e-switching Behavior. The relationship between the customer and empowerment behavior paradigm. The onlilne switching paradigm and the relationship are influence the price comparison [10].

III. PROPOSED APPORACH

Producing the food products are well sophisticated in the surrounding. In behalf of the RFID to improve the complete healthy and safety food product to prevent the wastage, kit based technologies are required to monitor the food product quality and increase the visibility of food product level to be in monitored data. In order to identify the product price list and the product details. In this paper I have used the google vision and raspberry pi. This raspberry pi is used to control the movement of the camera to check the price and details of the particular product. This raspberry pi is main to use the identified the product price variation from 5 rupee to 3 rupee updation. For these updation the google vision will help the camera to identify the each and every rack in the supermarket. In foreign countries many supermarket will price the product for high range but in the product pack the price is very low for this convenience the shopper will give the product for free of cost or low range price in the product pack. So this should not happen for that here the raspberry pi and the google vision will both combined together will update the price of the product is shows varying in the list (its shows mismatch the price of the product). By seeing this shoppers can identified the particular product price shows vary immediately he/she went to the product display will change the price of the product. This Robot will move to all the product rack by scanning the product to check the price of the product. This is the prototype. By this prototype we can able to know the mismatch price of the product.

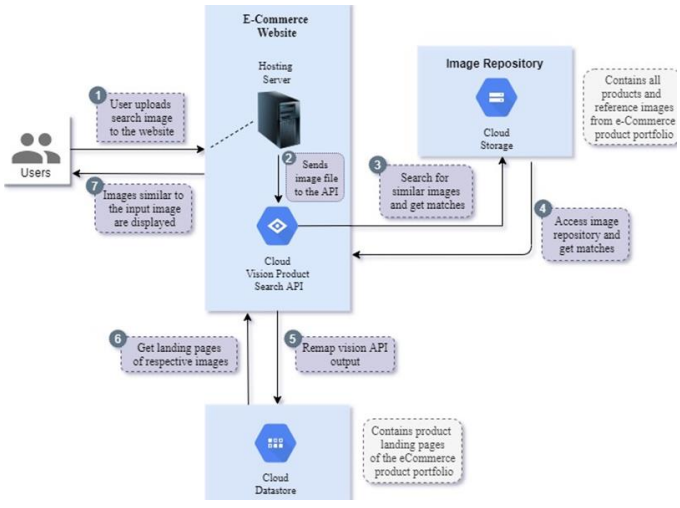

Fig 1: Architecture Diagram

A shopper can identify the product price mismatched with the help of the google vision and the raspberry pi with already generated the new buying product price in the list . With the help of the list many product are mismatched the product in the shop to deliver the product the customers will came to know the product price in the market was mismatched in the supermarket with the digital screen will displayed the product in the list of the inventory .When the user upload the search image to the website it goes to the e-commerce website to the host server then it will send image file to the API that to cloud vision product API fig: [1]. Then it will go to the cloud data store to get the landing pages of respective images to the cloud storage to the image repository system. It contains all the [roduct information to the product prototype system formatthen only it access the image repository system gets matches.

IV DESCRIPTION OVERVIEW

This google vision is take the image as encrypted coded text as always been the major area of the search engine details. This google vision is used many major infrastructures in their surroundings. This optical character Recognition methods as the banks used for comparing the statement and government used for used for to collect the survey feedback collections. It is specially used to extract text from images. It has two annotations one is text annotation and another one is document _text annotations. The images will stored in the cloud platform to the vision API. This images will send from remote or local network connection. It itself shows that your product is mismatched by the product price in today's market price. Through this paradigm manages the product till the roadshop Fig: 2. This core strategy are always will high in the range of the product price in the list. So this has to follow daily purpose of the daily product in the list of the product inventory list in the market .So keep this product price will generated in the digital screen with the help of wifi network connection in the supermarket. Thi is high quality range to low quality range all the range will be available in the list of the product platform strategy in the market platform plans and deifning technology Architecture product lines plans platform management. This core strategic vision is how it will be run successful in the market to finding this method many of the customers will buy the product has no bargaining system will be produce. There will be quite purchasing method will be done in the market. In this supermarket many people will buy the product by seeing the product rate in the market. However this method of inventory is fully implemented by in foreign countries but not in india this has to invented in the country to implement the process in every supermarket to all over india. Why because all people are no need to bargaining for the product. This procedure is fully invented by the method of google vision and the raspberry pi in the market to check the product price in the list while compare the product in the old price and day to day new price in the list many others are will not get confused in the market. According to this method this google vision will capture the image of the product and this raspberry pi will check the qr code with the help of scanner to check the product price in the list.

Fig: 2 Product Management Strategy

The core strategic vision is mainly developed by the new product in the list it easily integrate the product by vision detection product features in vision applications. The camera is fixed in the google vision stand it automatically visualize the product from price list to the digital list so there will be a mismatch and matched list will be separated. The customers will buy the product with the help of digital screen by seeing this they can able to know that many customers will update the product details in the product inventory stack. The details in the database will store in the google vision and the raspberry pi will also used here for the updation details in the product list. The raspberry pi will be a mini computer. It is low cost and single board computers it manages whole system in the product price list of the market. This prototype as the controlled to move the camera in front, back, left, right in every side Fig: 3. It has the python programming to do so many logical functioning methods are used here. To adequate this methods many of us are used the raspberry pi in the combined version of the google vision Fig :4 .This itself shows the product range in product list in the market the price of the product is high but in the range of having the list in the product pack is low if the customer asked for the price difference they will give the product for free of cost like many expenditure are there like that change the product in product inventory.

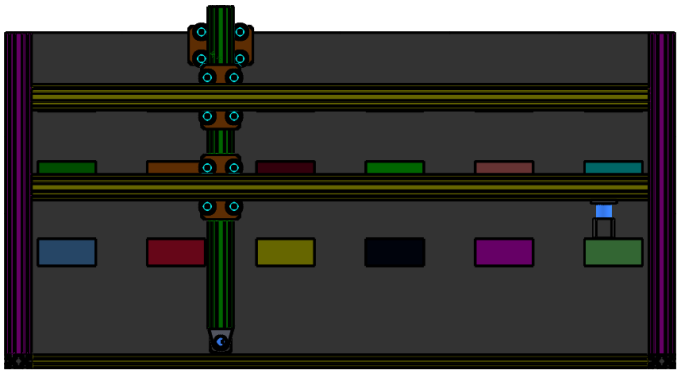

Fig : 3 Food Products are Tracing

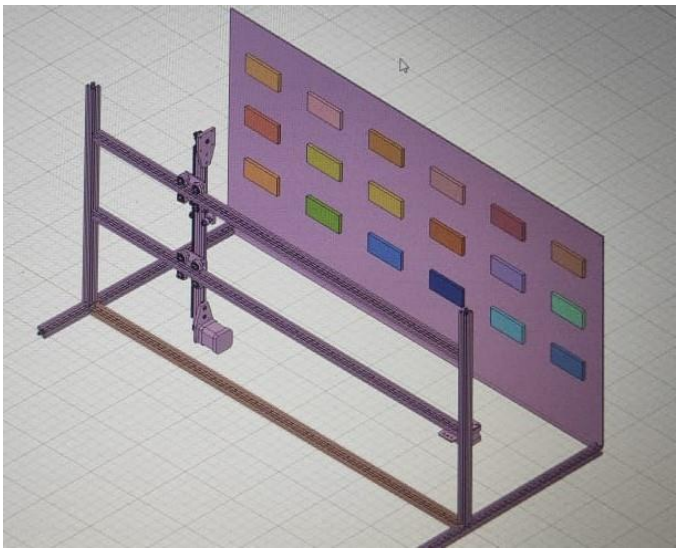

Fig :4 Raspberry Pi and google vision scanning the product price

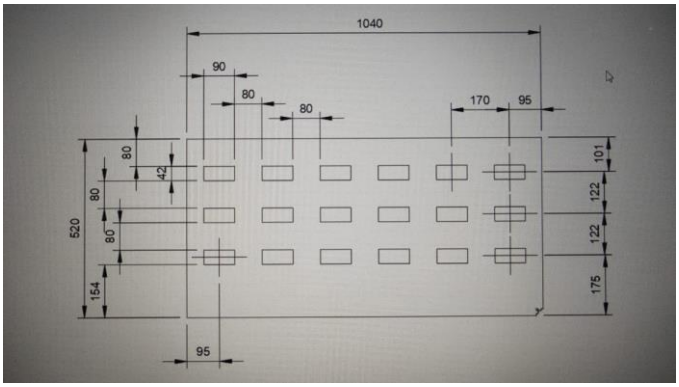

Fig :5 Dimensions Movement of Each Product

It has dimensions in each and every product. Based on the dimensions every product has to check the product according to the centimetre measured in the raspberry pi. This python programming as understand by the norms in the product to the data storage fig: 5.

Product Details	**Price Printed in QR code**	**QR code**	**Market price**	**Product Status**
Maggi	10	4039	15	Mismatch
Tomato	20	1110	15	Mismatch
Onion	25	1120	25	Matching
Chili Powder	50	1134	50	Matching

Table:1 List of Product Inventory

The product inventory will be announcing the product status in the digital screen like this by seeing this itself can identified the matching and mismatching product price automatically will

give the information to the shopper that this particular product price is different from the other market price. The shopper will change the price by seeing this mismatch product price in the inventory list. It will give the alert signal to the shop this connection will come through the internet connection that is WIFI connection Broadband Network. It can start the robot early in the morning before the shop open it will take a around to all the product price list in the rack it will scan the product what is matching with the market price and what is not matching with the product price. This security level will be high in process Fig:6.

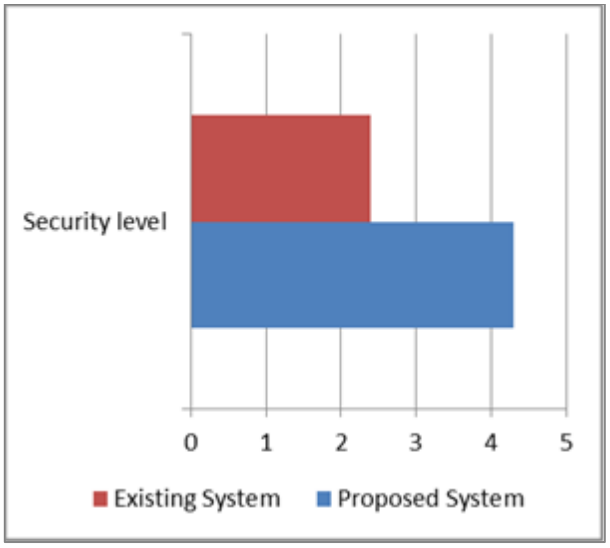

Fig 6: Privacy and Security Level

Through the raspberry pi all product information are shared in it. Raspberry Pi are always shared the networks space to google vision to the biometrics. This will updated in the encryption format that nobody can able to understand the transaction is done between the product buyers and sellers. This algorithm is to find the product details in implementation format to describe the process. This process will done in each and every process system in the market place can find the product and can buy the product. Thus how to done the process in each and every process in the organization system to produce the following step in table :2.

Algorithm: Input: Reference raw product details. Output: Product Price in Digital Board
1. Get the raw product from the database. 2. Preprocessing the product details in the admin account. 3. Extract the product price from the product pack with the help of QR code. 4. Find the histogram planes through the google vision and raspberry Pi 5. Convert the product images in encoded text. 6. Find the texture description from the google vision and raspberry Pi histogram and store in it shop. 7. Compute the robot in measured dimension in with the help of QR code scanner with google vision and raspberry Pi
8. Transaction through the product account details in the customer transaction. 9. It can able to check the product details from starting to the end.

Table: 2 Algorithm of Product Price Management.

V.CONCLUSION

It has the motor on both side horizontal movement and vertical movement to controlled the robot. This motor is has scanned the electronic Sticker to check the price so this motor is controlled by the raspberry pi. This raspberry pi will update the excel sheet in the product price list. For this we can reduce the man power to update the details in the product inventory storage database. To avoid the malfunction in the market to bring the customer satisfaction we can provide this robot as a man power to identified the mismatch product price in the list . Next generation has to follow the standardized tasks of the healthy trend appear in the smart cities. Thus finding the same product price is very difficult now it is easy to identify the same product price.

VI. REFERENCES

[1] Jianxia chen, Ri Huang "Price comparison system based on Lucene" IEEE 8th International Conference on Computer Science & Education. July 2013.

[2] Ladislav Beranek, Radim Remes "E-Commerce network with price comparator sites" IEEE 9th International Conference on advanced computer Technologies (ACIT). 5-7 June 2019.

[3] Andrea Horch, Holger Kett, Anette Weisbecker "Mining E-commerce Data from e-shop Websites" IEEE Trustcom/BigDataSE/ISPA 20-22 August 2015.

[4] Ashraful Alam, Atqiya Anjum, Fahmid Shafat Tasin "UPOMA: A Dynamic online price comparison tool for Bangladeshi E-Cocmmerce Websites" IEEE Region 10 Symposium(TENSYMP) Novenmber 2020.

[5] Jun Woo Kim, Sung Hoha, Mizanur Rahman Reyad, Sadia Afrin sinthee "Price comparison on the Internet based on computational Intelligence" https://doi.org/10.1371/journal.pone.0106946 september 2014.

[6] Riya shah,karishma Pathan, Anand Masurkar,Shweta Rewatkar, Prof(MS.)P.N. Vengurlekar "Comparison of E-commerce Products using Web mining" International Journal of Scientific and Research Publications, Volume 6, Issue 5, May 2016.

[7] D.Lekha, Dr.S.Chakaravarthi, Dr.P.Visu "Food Supply chain Management using Blockchain in Food Tracability" EAI http://dx.doi.org/10.4108/eai.30-6-2021.170253 June 30 2021.

[8] Kriston Passyn, Memo Diriker, Robert B Settle "Price Comparison, Price Competition, and The Effects of Shopbots"

Journal of Business & Economics Research (JBER)11(9):401-416, Doi:10.19030/jber.V11i9.8068 August 2013.

[9] David Ronayne “Price Comparison Websites” Series No:1056(version 5) ISSN2059-4283(Online) ISSN0083-7350(Print) October 2015.

[10] Michael Adu Kwarteng, Abdul Bashiru Jiril, Elsamari Batha, Christian Nedu Osakwe “The Influence of Price Compariosn Websites on Online Switching Behaviour: A Consumer Empowerment Perspective” April 2020.

[11] H.Onur Bodur, Noreen M.Klevin, Neeraj Arora “Online Price Search : Impact of Price Comparison sites on Offline price Evaluation” Journal Of Retailing 91(1) DOI:10.1016/j.jretai.2014.09.003 October 2014.

[12] S. Ancy, and D.Paulraj “Handling Imbalanced Data With Concept Drift By Applying Dynamic Sampling And Ensemble Classification Model, Computer Communications” The International Journal For The Computer And Telecommunications Industry, 153, Pp 553-560 2020 (Elsevier)

[13] S.Neelakandan and D.Paulraj, " An automated exploring and learning model for data prediction using balanced CA-SVM”, Journal of Ambient Intelligence and Humanized Computing, 2020 (Springer)

[14] “A New Approach to Integrate The RFID in the Internet of Things Using The MQTT Protocol and 6loRFID Framwork” Mohamed Taouzari, Ahmed Mouhsen, Hanane Nasraoui, IEEE conference paper-January 2019.