



Smart Shopping Cart using RFID Card

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ABSTRACT

Modern technology has increased the standard of living for humans. This resulted in large crowds at shopping malls. To handle large crowds at the shopping mall we proposed a system at will overcome this issue. In proposed system includes the shopping trolley that makes shopping activity easy and fast. The queue at the billing counter is a time-consuming process and it's wasted time in our system proposed system in such a way that it reduces the payment time of the customer. We used RFID in our system to scan the product at a time of selection will generate a bill automatically in the shopping counter at the time of payment we pay the bill which is Not a time-consuming process. In such a way the number of cells will increase and it has helped in it has the economy of the country).

Key words: Radio Frequency Identification, Liquid Crystal Display

INTRODUCTION

When we went to the supermarket we saw so much crowd on the billing counter that why we spend a lot of time on shopping, on billing counter that long queue makes shopping bored and time-consuming that's the thing keeping in mind we made a smart shopping trolley to make shopping easy and fast.

People suffer from these problems and do not realize that their precious time that needed to be invested in their work or with their family, is being wasted in a supermarket. As a solution to these problems, the proposed project prototype can be made into a mainstream product to help people we make shopping trolley that's make shopping easy and fast, and using of a shopping trolley is much easier went to the shopping buy whatever we want to scan it with RFID reader then generate bill on shopping trolley as well as counter and then pay the bill and it's done, and also used of this system indirectly we increased economy of our country and decrease unemployment of the country.

LITERATURE REVIEW

Abhilash C B, srinidhi Karjol, Anusha K. Holla in An IoT Based Smart Shopping Cart for Smart Shopping proposed today's world has a fast-growing population with a wide range of demand from a variety of domains. Customers who need to purchase different products in Walmart or supermarkets need a lot of time and patience in coordinating among themselves for successful shopping [2].

Dr. suryaprasad jayadevappa in a novel Low-Cost Intelligent Shopping Cart proposed to low-cost shopping cart an innovative product with societal acceptance is the one that aids the comfort, convenience, and efficiency in everyday life [3].

PROPOSED SYSTEM

In the present-day shopping system, one of the difficulties is to follow the queue through the billing process which is time-consuming. Our product aim is to save a customer time, for that [4].

A smart shopping cart makes shopping easy and fast,

With the help of RFID reader and RFID card scanned a product to update the price of product and detail about the product, when shopping is done bill is automatically generated on basket LED and also on the counter then pay the bill by credit /debit card or shopping wallet and make shopping easy and save a time.

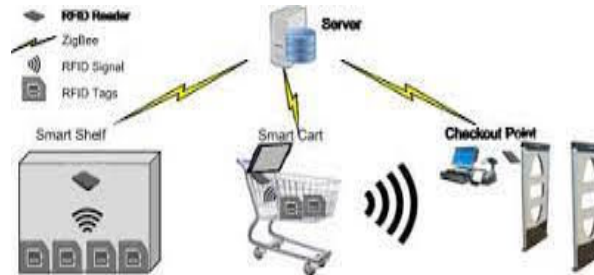


Fig. 1 Working of a shopping cart [8]

These functions make sure the proper management of products in the store. Stock management deals with product quality, product quantity, and minimum stock maintenance which ensures the proper management of stock in the store. Our proposed system is easy to use and no special training is required.

HARDWARE REQUIREMENT

(I) RFID Reader

A Radio Frequency Identification Reader (RFID) is the device to collect information from an RFID tag that's used to track a particular object [6]

RFID reader requires a range from 3 to 300 feet

RFID technology allows servers for the fastly scanned device.



Fig. 2 RFID Reader [8]

(II) RFID Tag

RFID tags are types of system for a tracking device system that uses radiofrequency to search, identify, track and communicate with items,

RFID tags are of two types

Passive Tag

It is the cheapest version of an RFID tag without a battery. This is nearly attached to the RFID reader because the passive tag has used the battery of the RFID reader, cost of this tag is very low compared to the active tag [5].

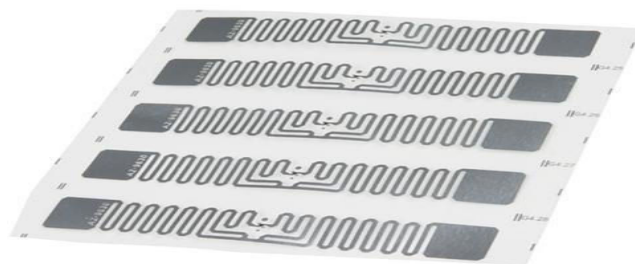


Fig. 3 Passive RFID card [8]

Active Tag

These tags have the inbuilt battery and we attached this costly as compared to the passive tag, we do not need to attach this tag nearest to the reader



Fig. 4 Active RFID tag [8]

(III) ESP32

ESP32 can perform complete independent hardware completely control by a host MCU, reducing communication stack overhead on the main application processor. ESP32 can interface with other systems to provide Wi-Fi and Bluetooth functionality through its SPI / SDIO or I2C / UART interfaces.[7]

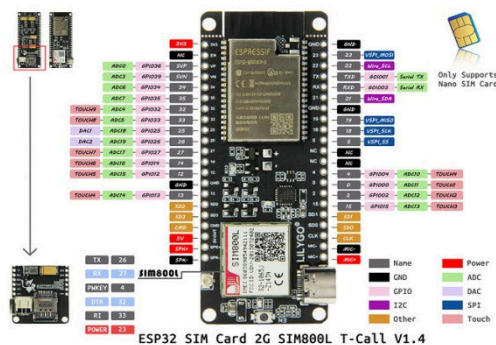


Fig. 5 ESP32 [8]

ESP32's Wi-Fi Range Extended to 10 km with a Directional Antenna.

(IV) OLED Display

OLED displays feature good image quality - bright colors, most importantly - very high contrast. With the help of OLED, we generated the prize of product and information about product display the total on OLED.

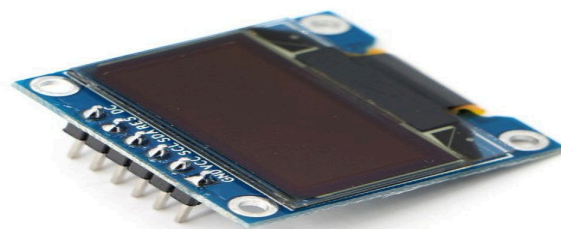


Fig. 6 OLED display [8]

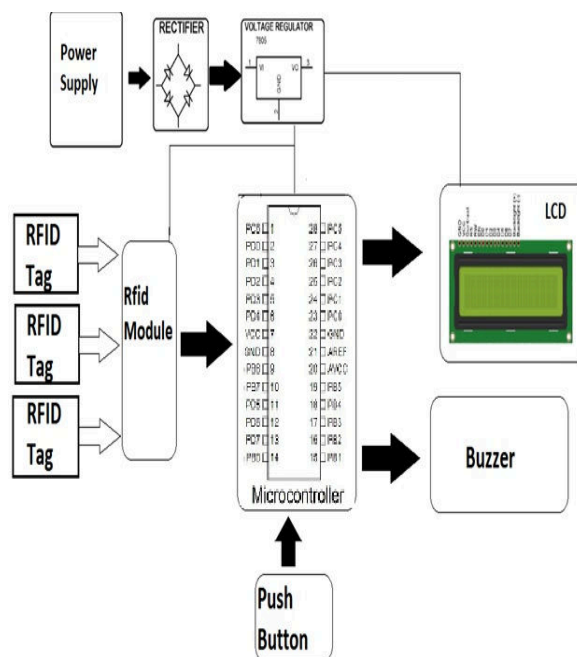


Fig. 7 Block Diagram

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