

# Smart Kart using QR Code

<sup>1</sup>Vishal Panchal, <sup>2</sup>Dr.Surekha Kohle,

*Veermata Jijabai Technological Institute, Matunga, Mumbai.*  
*Associate Professor, Veermata Jijabai Technological Institute, Matunga, Mumbai*

Submitted: 15-06-2021

Revised: 27-06-2021

Accepted: 30-06-2021

**ABSTRACT:** The smart trolley / smart cart is a way to cut down on supermarket shopping time. Every supermarket has a shopping trolley for consumers that is used to select the items they want to buy. However, customers may encounter a variety of issues at the billing counter, including waiting and not knowing whether they have enough money to cover their purchases. The complete billing procedure could take a long time and require more human resources in the billing department. The presented solution includes the use of a smart trolley or smart cart to address this issue. It comes with a barcode scanner and a touchscreen display that scan and displays information of the item, its price, and the total amount of the items. Paytm, Google Pay, and PhonePe are few of the online payment options available to the user for paying their bill. This solution will improve customer experience by reducing shopping time and unnecessary waiting in the billing queue.

**KEYWORDS:** Smart trolley, Smart Cart, QR Code, RFID, User Interface.

## I. INTRODUCTION

To collect the products, every supermarket and shopping mall now uses shopping baskets and carts. When we are at a shopping mall, it is simple to take the trolley and shop for whatever we want, but when we have to take the things outside, we must wait in line for a long time to be billed for the products. As a result, billing the products takes longer.

We can solve this problem by employing smart trolleys, which can help to reduce queues in the mall. It saves time for the customer. New technologies, such as RFID, QR codes, and Li-Fi, make shopping procedures more efficient, transparent, and fast. Our goal is to create a system that makes shopping more convenient and easier. There are two ways to implement a smart cart / smart trolley:

1. RFID (Radio Frequency Identification) Reader
2. Using QR Code with help of mobile phone

## II. SMART TROLLEY USING RFID

### WHAT IS RFID:

The term "Radio-Frequency Identification" is an acronym for Radio-Frequency Identification. In the technique of RFID (Radio Frequency Identification), radio waves are used to detect tagged items in a passive manner. Radio Frequency Identification (RFID) refers to a wireless technology which consists of two parts: tags and readers. An RF module works as a transmitter and receiver of radio frequency signals in an RFID reader.

Through an antenna, it receives RF data from tags. The number from the RFID tag is read using radio waves rather than light. There is no need for a line of sight for an RFID reader. It has the ability to read multiple data at once. The RFID reader can read for up to 300 feet, whereas the barcode scanner can only read for 15 feet.

### METHODOLOGY:

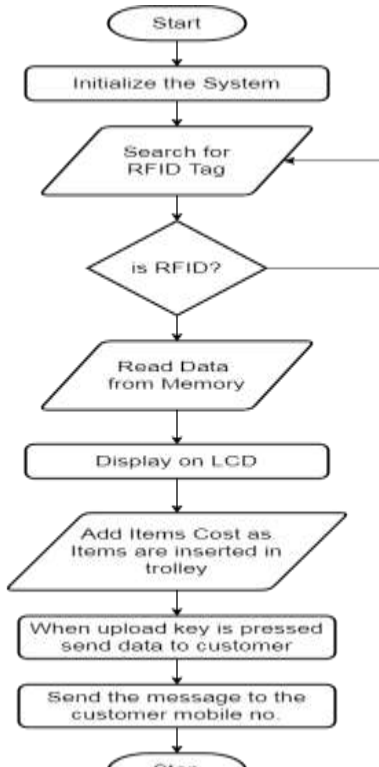
An RFID tag with a unique identifier is attached to every product. If a consumer wishes to buy something, he or she can put it in the shopping cart/smart trolley and the RFID scanner will read the tag. The information of the item is retrieved and displayed on an LCD panel. Billing information is also updated at the same time.

When a user decides to remove an item from their shopping cart, they must scan it again. The billing information is simultaneously updated at that time. The total number of items purchased are displayed on the screen. These steps are continued until either they finish shopping or the button to send a bill is pressed. This bill is forwarded to the computer of the billing counter, which generates an invoice via Li-Fi. The customer can pay the amount and go right away. At the end of shopping, the status of the items is also updated in the inventory. Meanwhile, the microcontroller's data which is temporary is reset, which makes it reusable.

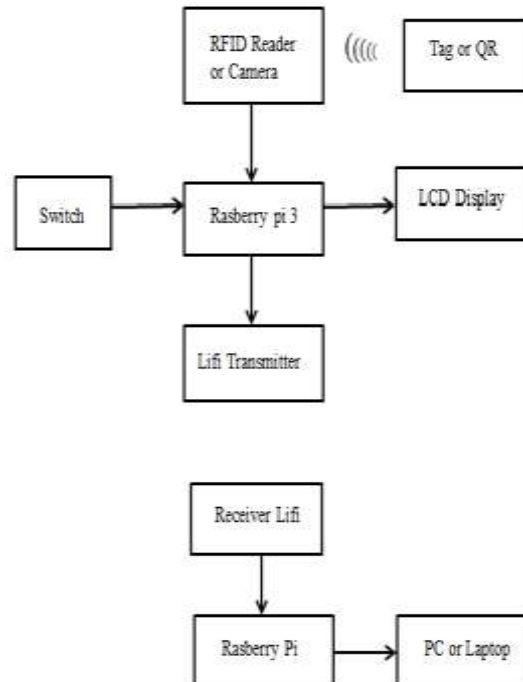


Smart trolley using RFID

**FLOW CHART:**



**BLOCK DIAGRAM:**



**III. SMART TROLLEY USING QR CODE WITH MOBILE**

**WHAT IS QR CODE:**

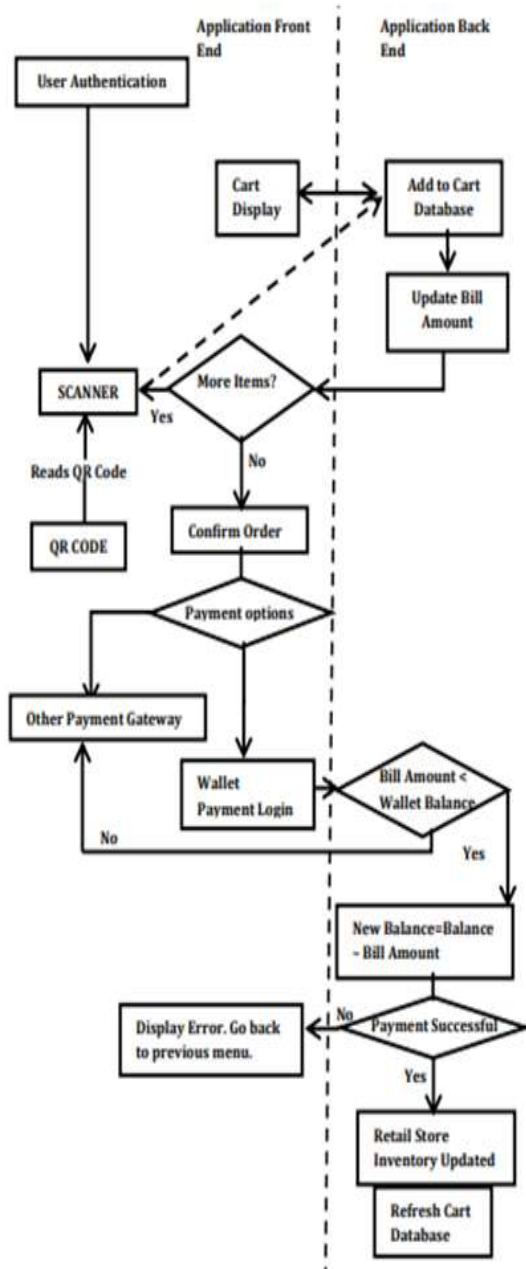
Quick Response is abbreviated as QR. They are used to transfer data from a transitory medium to your cell phone. This study posits that customers' opinions about QR codes are positively connected with their intents because QR codes are one of the techniques of mobile marketing. The goal of a shopping guide is to assist customers in their purchasing decisions.

**METHODOLOGY:**

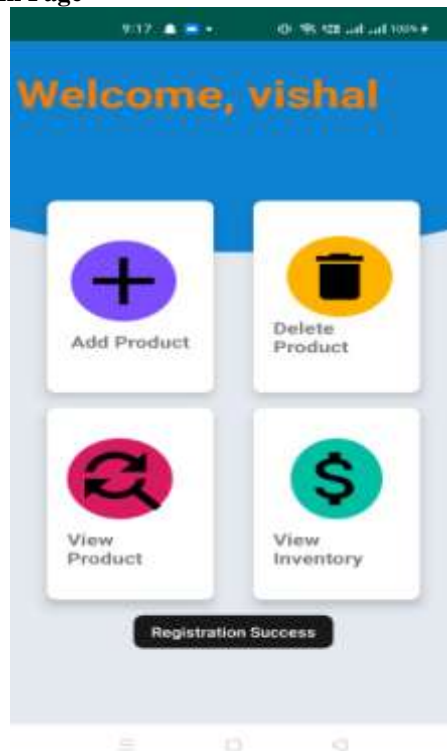
Every product will be identified by its own QR CODE. If a customer wishes to purchase a product, the QR Code for that product can be scanned using a mobile phone application. The information of an item is extracted and presented on the mobile screen. When a user wants to remove an item from their mobile cart, they can delete it from the screen. On the screen, the total amount of purchases is also shown. This process is repeated till the shopping is completed or the send bill button is pressed. Using a mobile network, this created bill is forwarded to the computer of the billing counter, which generates a computerised bill. The customer can pay the amount and go right away. At the end of shopping, the product inventory status is also updated. In this context, the authors consider a shopping procedure in which buyers must monitor and locate their preferred products by scanning the QR code attached to each

item. The goal of the smart cart/smart trolley is to present a real time capture system for users supplies using an Android smartphone and a Quick Response (QR) code. Multiplexing and demultiplexing processes are used to encode and decode data from a single QR code with specific symbols, and then break the data back into QR Code patterns that can be read by Android smartphones like Samsung, MI, One Phone or IOS mobile phones such as apple.

**FLOW CHART:**



Login Page



Dashboard Page

**USER INTERFACE:**



Product Details Page



Registration Page



Home Page  
 Cart Page

#### **IV. CONCLUSION**

The Smart Trolley/Smart Kart enables users to shop, and pay the bill amount generated in less time and in a simple manner. The user can pay the bill by scanning the barcode. Supermarket operators benefit from time savings, reduced staff, and reduced space, all of which save investment. The smart shopping trolley is suitable for usage in all retail establishments, including supermarkets, shopping malls and clothes showrooms. Both customers and shopkeepers benefit from this.

#### **REFERENCES**

- [1]. Dr. Suryaprasad J, Praveen Kumar B O, Roopa D & Arjun A K, 2014, "A Novel Low-Cost Intelligent Shopping Cart", IEEE.
- [2]. Amine Karmouche, Yassine Salih-Alj, 2013, "Aisle-level Scanning for Pervasive RFID based Shopping Applications", IEEE.
- [3]. Satish Kamble, Sachin Meshram, Rahul Thokal & Roshan Gakre, January 2014 "Developing a Multitasking Shopping Trolley based on RFID Technology", International Journal of Soft Computing and Engineering (IJSCE).
- [4]. Raju Kumar, K. Gopalakrishna, K. Ramesha, 2013 July, "Intelligent Shopping Cart" International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 2, Issue 4.