SMART SHOPPING MALL

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Abstract: A product having societal acceptance is the one that helps comfort, provides efficiency and convenience in everyday life. Big shopping complexes are being developed in metro cities. Huge rush can be seen at these malls on holidays and weekends. People wanting to purchase products have to carry them in the trolleys. After finishing choosing the products, one proceeds to go to billing counter. At billing counter bill is generated by scanning the products manually using a hand assisted barcode scanner. This takes a lot of time resulting in a long queue for billing. In this project, we discuss a system which is being developed to aid a person in day-to-day shopping in terms of reduced time spent while purchasing. The main objective of proposed system is to provide a technologyoriented approach which is pocket friendly, scalable and rugged system for assisting shopping. Key Words: Intelligent Shopping, Shop-ping Cart, User Interface, Server Communication, Automatic billing. People find it difficult to locate the product they wanted to buy, after selecting product they need to stand in a long queue for billing and payment. To try to solve the problems previously identified, we have developed our system. Another motivation is the use of smart-phone for implementing shopping in shopping malls using better interface for users and to ease the process. To provide a technological view to solving the problem of manual shopping systems in malls.

INTRODUCTION

This system will assist customer in his everyday shopping by reducing the shop- ping time. It also provides better assistance to the mall managers. This is an innovative system that will provide comfort and convenience to the shoppers and managers. While surveying we found that most of the

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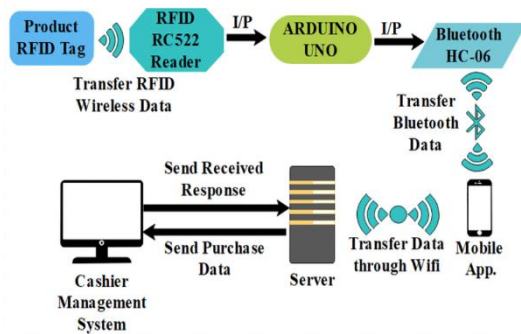
EXISTING ARCHITECTURE

Fig:-Existing Architecture Of Smart Mall

The main contributions of this paper are following:

• RFID sensors with a shopping cart are proposed that connected with Mobile Application makes the consumer get desirable and the best quality products in the meantime.

• The searching and shopping list management modules are added in Mobile Application which helps the consumer to find the location in the supermarket, to remember the shopping list and to manage the shopping list according to preference.

• The promotion module helps the supermarket to promote the product and offer special discounts to the consumers that can enjoy different product promotions and discount offers.

• Wireless communication will provide flexibility to the shopping and supermarket management system.

• The backend supermarket management system facilitates the supermarket to personalize its shelves and products according to consumer preferences.

PROPOSED ARCHITECTURE

System architecture is a conceptual model that defines the structure and behavior of the system. It comprises of the system components and the

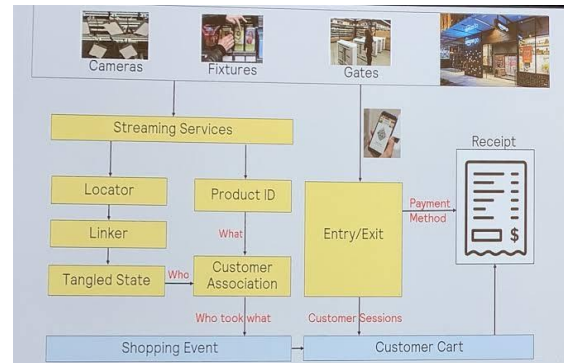relationships describing how they work together to implement the overall system.

Fig:-Proposed Architecture Of Smart Shopping Mall.

TECHNOLOGIES USED

The technologies we used for this project are:
□ **ESP8266** is a low-cost WiFi module that belongs to ESP's family which you can use it to control your electronics projects anywhere in the world. It has an in-built microcontroller and a 1MB flash allowing it to connect to a WiFi. The TCP/IP protocol stack allows the module to communicate with WiFi signals.

• **The Arduino GSM** shield allows an Arduino board to connect to the internet, send and receive SMS, and make voice calls using the GSM library. The shield will work with the Arduino Uno out of the box.

• **The Arduino Uno** is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a type B USB cable. It can be powered by the USB cable or by an external 9-

volt battery, though it accepts voltages between 7 and 20 volts.

- **Radio Frequency Identification** RFID (radio frequency identification) is a form of wireless communication that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal or person. Every RFID system consists of three components: a scanning antenna, a transceiver and a transponder. When the scanning antenna and transceiver are combined, they are referred to as an RFID reader or interrogator. There are two types of RFID readers -- fixed readers and mobile readers. The RFID reader is a network-connected device that can be portable or permanently attached.

- **Computer Vision** Computer vision is a field of artificial intelligence (AI) that enables computers and systems to derive meaningful information from digital images, videos and other visual inputs and take actions or make recommendations based on that information. If AI enables computers to think, computer vision enables them to see, observe and understand.

- **Camera** for Viewing and detection. A camera is necessary to capture and serve the necessary image for the algorithms to accurately detect and identify objects I a shopping cart.

CONCLUSION

The proposed system is helpful to both user and mall managers. The system is developed considering all issues related to all users included. Variety of customers can use this system if they know how to operate android smart phones. System is user friendly, low-cost and does not need any special training. Our system would prove time saving and ease the shopping process for many people using

the system. The advantages of the system make it more robust. We propose a protected smart shopping framework using RFID innovation. We detail the structure of a total framework and construct a model to test its functions. We trust that future stores will be secured with RFID innovation and our exploration is a spearheading one in the improvement of a smart shopping framework. Our future research will concentrate on improving the momentum framework, for instance, by adding the smart shelves to enhance easy inventory management, make receivable information to mobile phone.

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