

# Smart Fridge

Mr. Raghavendra Patil G E  
Assistant Professor Dept of CS&E  
SDMIT, Ujire

Ms. Dhanusha I  
(4su14cs026)  
Dept Of CS&E SDMIT, Ujire

Ms. Ranjitha Y  
(4su14cs078)  
Dept Of CS&E SDMIT, Ujire

Ms. Sukeerthi K C  
(4su14cs0102)  
Dept Of CS&E SDMIT, Ujire

Ms. Himashree  
(4su14cs037)  
Dept Of CS&E SDMIT, Ujire

**Abstract:-** Smart appliances with multimedia capability have been emerging into our daily life. Smart appliances include washing machine, television, refrigerator etc. In this modern era, human being is used to in touch with this technology or we can say it as internet of things (IoT). As we look around ourselves we see modernization with superior technology, for example cell phones, kitchen, appliances and many more. It uses fast advance of computing technology and the wide use of the Internet, smart home is one of the most prominent areas of intelligent appliances. Kitchen is one of the places where such intelligent appliances are mostly used. Existing systems used high technology that increases its complexity. The products currently available are expensive so the user has to buy the whole costly refrigerator. The Smart Refrigerator module is designed that modifies any existing normal refrigerator into a smart refrigerator which is cost effective, using various sensors.

**Keywords:-** Uno R3 ATmega328P, Raspberry Pi, RFID, IOT.

## INTRODUCTION

Refrigerator is one of the commonly used electronic product in home hospitals, markets etc. for storing the items. It also keeps things cold and good for longer time by protecting it from microbes, insects and rodents. Freezing stops the multiplying of organisms. Most of all, it has become a helping hand for woman to keep the vegetables, milk and other eatable stuffs for longer duration than it could have been stored in normal temperature. The main agenda of smart refrigerator is to reduce the burden on memory in keeping track of items that the user stores in refrigerator.

## EXISTING SYSTEM

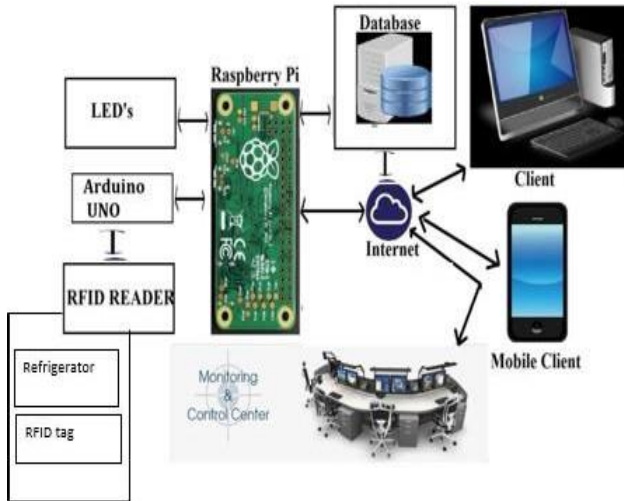
Smart refrigerator by Samsung has feature like food management- create shopping list and order groceries, family connection- integrate family members' schedule and share photos, entertainment- play music. Though the cost of refrigerator is genuine for the feature the Samsung refrigerator offers, it is not affordable by the common people.



## PROPOSED SOLUTION

Smart refrigerator uses the IOT technology along with sensors and remainder systems which helps to keep track of all the items that have been stored in refrigerator and get the user notified when the item gets emptied. The concept of remainder system is used to notify the user to use the item before it gets spoiled or emptied. To achieve this, weight sensor and radio Frequency Identification (RFID) sensors are used. Weight sensors weigh the items being stored in the refrigerator and RFID sensors are used to collect the information from RFID tag which is used to track individual items. It allows several items to be quickly scanned. RFID consists of small integrated circuit attached to antennae, capable of sending a unique serial number a distance of several meters to a reading device in response to a query.

Architecture:



IMPLIMENTATION

Implementation involves connecting Raspberry Pi with monitor. Raspberry Pi is then connected to Uno Aurdino board. RFID sensor is connected to the Aurdino board. Once these circuit connections are done install required packages that supports raspberry Pi, Aurdino.

Table 1. Connection of MFRC522 Pins to Arduino

RFID-RC522	Arduino
3.3V	3.3V
RES	D9
GND	GND
MISO	D12
MOSI	D11
SCK	D13
SDA (SS)	D10
IRQ	Not used

RESULT

Word is moving towards innovations. People accept the useful innovations from any field. Smart fridge is one such innovation in the field of IOT and home automation that has been accepted by people worldwide. The objective of the smart refrigerator is well served with affordable cost.

FUTURE ENHANCEMENT

Every concept and every field has advancements and enhancements. Smart refrigerator provides variety of areas to be enhanced.

This paper makes use of RFID reader to keep track of items that are being stored in refrigerator which can be improvised by using QR reader. QR reader also helps to track the details of item.

CONCLUSION

Innovation becomes successful when we develop certain things which are beneficial to all classes of people. Home automation is the field that provides scope for innovations since it's the place where people like to spend their valuable time. If the home where we live is automated and filled with innovations it makes life easier than ever. This paper is a step towards one such innovation.

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