Smart Refrigerator Using IOT

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Abstract – The Internet of Things (IoT) refers to the set of devices and systems that interconnect real world sensors and actuators to Internet. This consist many different number of systems, such as smart objects, smart monitoring devices, home automation systems, smartphones. kitchen is one of the prominent zones of intelligent appliances, one of those devices is refrigerator. The paper deals with the designing and development of a smart refrigerator which is able to know the quantity of the items kept inside it. It will be smart which will be able to notify the current status of food items through an android app on our mobile phone.

Key Words: Android, Load sensor ; Internet of Things (IoT); Smart Home refrigerator.

1.INTRODUCTION

The growth of the number of devices that are connected to the internet and are collecting data is increasing rapidly. Its core philosophy is built on cloud computing and networks of sensors gathering data. The Internet of Things is mobile, virtual, and based on connections. Refrigerator is the mostly used kitchen electrical appliance all over the world for storing a food . This appliance is used for multiple purposes such as storing vegetables, fruits etc. Smart refrigerator module is designed to transfigure any existing refrigerator into a smart cost effective machine by using sensors. This module compares the status of the food like weight, quantity etc. Applications with hypermedia capability are being used in today's life, all the major credit goes to digitalization of technology and wide usage of internet. In this modern human being is used to deal with technology or we can say it as IOT. As we look around ourselves we see the superior technology, like cell phones, kitchen, appliances and many more. Here we study about smart refrigerator, because people are very busy in day to day life style.Usally they do not really have time to look after their healthy habits and diet; since we are capable to deal with the technology we can design a smart refrigerator system that helps us to maintain a healthier lifestyle without putting any extra effort and time. In this paper we had propose smart refrigerator which leads to healthier lifestyle.

Here we discover the presence of the object by using load sensor that checks the weight of products in container where objects had placed. It challenges to develop smart appliances while we are appreciating about a smart home application. A refrigerator is one of the motivation while we talk about the research. We have seen number of advancements while developing smart refrigerator in industry and research over world. The industry is trying now to change the functioning of refrigerator, by storing food items of contents in a suitable   environment   these   computer-operated capabilities allow the development of applications for many devices one of them is smartest refrigerators. In this module, we design to develop smart refrigerator which is an intelligent embedded system and allows the user to manage and accurately locate food items which has been storing inside it. Similar group of food items are placed at multiple blocks. It is true that the fast-paced development and today's modern living has brought a depressive change on people lifestyle towards less physical activities and efforts.

2. Body of Paper

The aims of proposed design is to implement a smart refrigerator system, which is economicaly easy to use for the user. It is capable and notifys it owner about the activities going on inside it through wireless system on the mobile phone. The android app developed is used as a GUI for the user where it will be able to see the condition of the food items which is kept inside the refrigerator. The whole system is governed by the STM32F103x8 cortex M3 ARM microcontroller where load cell act as an input of microcontroller and Wi-Fi transmits the all information to the android phone by usingIoT. The items weight is set below the threshold value to alert that notification is send to the user's mobile to refill the food items before the get over.
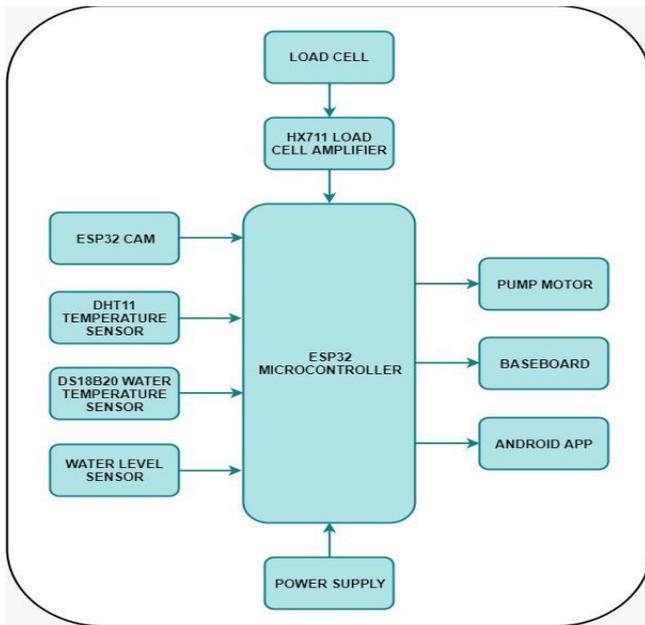
Fig -1: Figure

The steps for designing the system are: 1- It Checks the initial value of the food item that is kept inside the refrigerator 2- Food items picked from the inventory tray 3- It compares the status of food items (ie.present value with threshold value) 4- If load value is below the threshold value then send the notification to the user on their mobile phone. The system includes of many sections where the sensors as Load cell sensors are placed alongside with a counter which can be used to sense the number of vegetables inside the refrigerator which is done with the help of load cell sensors that has a threshold of 200gm approximately.Whenever the food items present in the refrigerator goes below the threshold value than it generates an alert which is being transmitted in the form of message to the user.
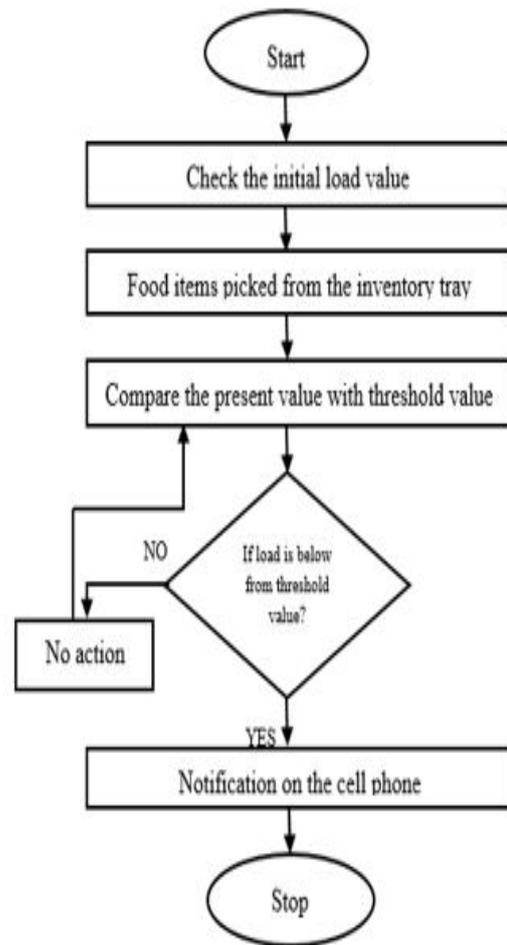
3. CONCLUSIONS

We had introduced smart refrigerator application with intelligent multimedia capability. The proposed smart refrigerator can enable health. It has been designed for managing items stored in refrigerator. Through the smart refrigerator people can save money with less efforts. We are sure that this type of smart working refrigerator will be important component in future smart homes.The concept of smart refrigerator is far more reaching than notifying the user about the contents of the refrigerator. Smart refrigerator is economically cost effective, and userfriendly.

ACKNOWLEDGEMENT

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