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Smart fridge design using NodeMCU and home server based on Raspberry Pi 3

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Abstract:

Smart Refrigerator is an appliance which converts an ordinary refrigerator into a smart refrigerator. Various features offered by this refrigerator include the ability to know the number of items in the refrigerator, order low stock goods and provide notifications to the user. Notifications provided are the items expiring soon, temperature rise in the refrigerator, as well as a wide variety of error messages that is sent by the refrigerator. In addition to these features, the refrigerator is also connected to an Android application that allows users to see the contents of the fridge, order food items, record transaction history and perform a variety of configurations. This device uses photodiodes placed at several points to detect the presence of objects, DS18B20 as temperature sensor, NodeMCU as a controller, and Raspberry Pi 3 as a home server. The controller will collect all sensor information and send them to RaspBerry Pi 3.

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I. Introduction

The growth of technology is inevitable. Every innovation was created to have positive impact in human life [1]. One of the most developed technologies today is Internet of Things (IoT) where the things can be located, tracked, monitored and controlled automatically. The rapid development of information technology (IT) has brought a hyper connected society forward where objects are connected to mobile devices and the Internet, communicating with one another [2]. Many IoT based appliances, like the smart refrigerator, have been developed to facilitate human needs.

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Keywords

IEEE Keywords

Refrigerators, Servers, Androids, Humanoid robots, Photodiodes, Temperature sensors, Databases

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Smart Refrigerator, Internet of Things, Android, NODE MCU8266, Server, Raspberry Pi 3

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