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Automated Medicine Box Detector Using Arduino Uno Microcontroller

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ABSTRACT: Today, automation plays an important role in human life. People always look for convenience even in handling commodities and other basic needs in life such as food and medicine. Automation not only refers to reduced human effort but also energy efficiency and time saving. In this orientation we present a working model of an automatic medicine detector using arduino microcontroller. The user will enter the name of the medicine and the LED will blink on that particular box in the rack. We are going to built an android application which will help to find the medicines in less efficient time.

1. INTRODUCTION

In the past few years there are so many inventions in the field consumer electronic such as cellular phone, air conditions, medical security devices and home theaters. This work has been vastly used in medical fields day by day. All these appliances can be easily controlled by a single controller, using personal area network in a home environment. In buildings, temperature and other electronic devices can be easily controlled by home automation but high degree of computer work is involved. This report demonstrates a simple home automation system which consists of remote mobile, host controller, and several home appliances. The client module can detectthe medicines through a Wi-Fi module such as ESP module.

It is very hard task to find medicines in time. So, in this module the medicines have been kept in the rack and boxes of the medicines contain LED on it. Whenever the user enters the name of the medicine through the application the particular LED on the medicine box will blink. This will help the user to find the medicine in less time and correct medicines will be deliver to the customers.

II. HARDWARE DISCRIPTION

ARDUINO UNO
Arduino is an open-source electronics software. This makes platform-based software and also easy-to-use. Arduino take the data from the user and according to that it gets further operations such as read the inputs - light on a sensor, a finger on a button, and turn it into output by activating a motor or turning on an LED, We can design any circuit on board. By sending the information or instructions to the device, and then according to this it works. To do so we can use the Arduino programming language, and the Arduino Software (IDE), based on Processing free of cost. The Arduino aiming to provide a low-cost and easy way to create devices that interact with their environment using sensors and actuators.

ESP8266 Wi-Fi MODULE
ESP8266 is Wi-Fi enabled system on chip (SoC) module developed by Espressif system. It is mostly used for the development of the Internet of Things (IoT) embedded applications. The ESP8266 is a low-cost Wi-Fi microchip with full TCP/IP stack and microcontroller capability produced by Shanghai-based Chinese manufacturing company Espressif Systems.

POWER SUPPLY

The power supply is the first and most important part of our project. For our project, we require a +5v regulated power supply with a maximum current rating of 500mA. The 1000µF capacitor serves as a "reservoir" which maintains a reasonable input voltage to the 7805 throughout the entire cycle of the AC line voltage. The 10µF and .01µF serve to keep the power supply voltage constant when load condition changes. However, at high frequencies, this capacitor is not very efficient therefore the .01µF is included to bypass high-frequency changes such as digital IC switching effects, to ground.

III. SOFTWARE DISCRIPTION

CODE BLOCK SYSTEM

Code::Blocks is a free, open source cross platform IDE that supports multiple compiler including GCC, Clang and visual C++. It is developed in C++using wx widgets as the GUI toolkit. Using a plugin architecture, its capabilities and features are defined by the provided plugins. Currently, Code::Blocks is oriented towards C, C++ and Fortan. It has a custom build system and optional makee support.

IV. SYSTEM OPERATION

4.1 Step by Step Operation ofSystem

1. Firstly, you have to register the names of medicines available in your pharmacy Store.
2. Once you registered the names then no need to do it again
3. Login using registered I'd to get enter in the system
4. Once you entered in the system. Then directly you can search your medicine
5. Type the valid name, or description of medicines
6. Then the system will check. Is the medicine available or not.
7. If the entered medicine is not available the system will inform you.
8. Else the LED of shelf will glow.
9. Where the medicine has been kept.
10. In this way you can detect the medicine.

V. RESULT AND CONCLUSION

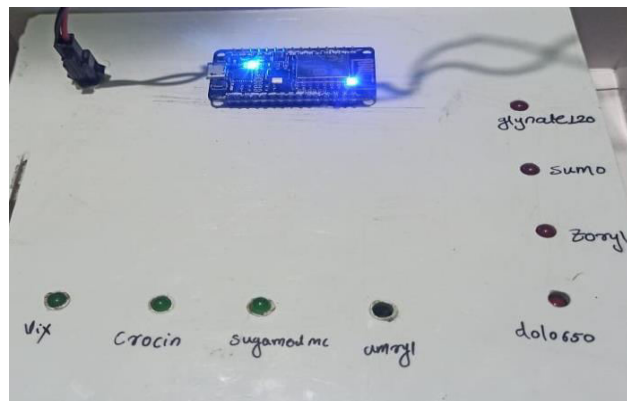**1. User has to register the name of medicine with name, expiry date, etc .**

2. Search the medicine by entering its name. eg:Vicks
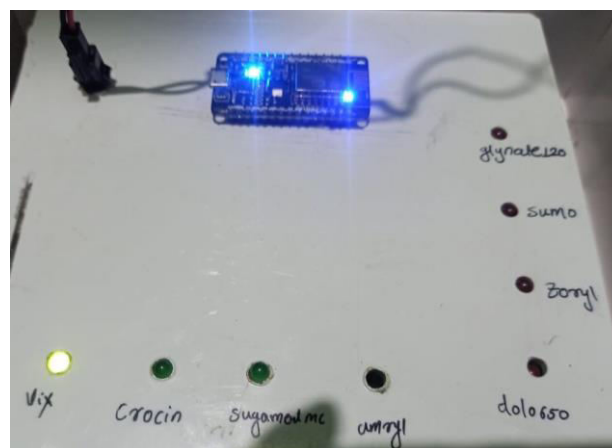
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Add Medicines

3.then firstly connect ESP Wi – Fi module to make connection between software and hardware.

4.5. If the medicine is available in the store the LED on that particular will glow, otherwise if medicine is not available the pharmacist will be get notified.

This is an android application at low cost, useful model for an automatic medicine box detector using simple electronics applications. For easy detection and alert, LED has been attached so that the person in medical lab is concerned and can give the right medicine to his customer in time andin the right quantity without personalized supervision. This easy way to use device can be a convenient option for all medical stores.

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