Medicine Place Finder and Auto Inventory Management System In Medical Store

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Abstract: Medication in today's world is of great importance. With the advancements in technology, automation is required everywhere to save time and efforts. "MEDICAL STORE AUTOMATION" is one such automation which is purely embedded system which will play an important role in health care,
where we have implemented "automatic drawer opening system or cabinet system with stock inventory". The main objective is to find the place of the required medicine by automatically opening that drawer to save time in searching. This paper presents a system called the Medicine place finder and Auto Inventory Management System, with the updation of the medicine stock.

1. INTRODUCTION

In day today life medical field is having great importance. Every day we found crowd at the medical store. The seller alone has to do duty of providing not only the appropriate medicine but also in time. In traditional medical system the medical system the medication is done by remembering the place of medicine. Hence many of times it happens that he can't found the required medicine in time.   Hence now there is need to develop the new system which will overcome all above problems of traditional medical store system, and reduces burden on workers.

So new automatic system "MEDICAL STORE AUTOMATION" is developed which is purely embedded system, where we are going to apply "automatic drawer opening system or cabinet system with stock information". This requires preparation of medicine data with its rack address by using visual basic software.

2. RESEARCH METHODLGY

2.1: Problem Identified:

Pharmacy management is the process of managing the medicine stock and selecting the suitable medicine to the illness that is prescribed to patient or customer. The core of pharmacist   profession is the maintenance of quality and the subsequent implication for patient care.

Selecting suitable medicine for particular illness usually takes time and makes the patient or customer waiting in case of unavailability or finding substitute medicine. For the medicines stock management, the pharmacist keeps on checking manually which requires lot of time. Our proposed system with LCD display, displays information of stock so that quantity of each medicine is easily available to shop owner.

The domain of this project is one of the "Embedded system technologies" in Healthcare application to help the pharmacist for managing their stock and select the medicine using computer program and find the place of tablet automatically.

2.2: Proposed Work

This system provides the information of the medicine that is sold along with stock. The modules involved are medicine management module, medicine selector module, selling process module, medicine list module, statistic of medicine sales module, monthly report module.

3. Block Diagram:

In proposed system Ardiuno is used to make system cheaper which works at 5 volt DC supply. The MAX 232 is connected between PC and Ardiuno for serial communication. The Supply voltage from the Aurdino is given to the relay drive circuit. Six relays are used to operate three drawers. Two relay operate one drawer for forward and reverse movement.
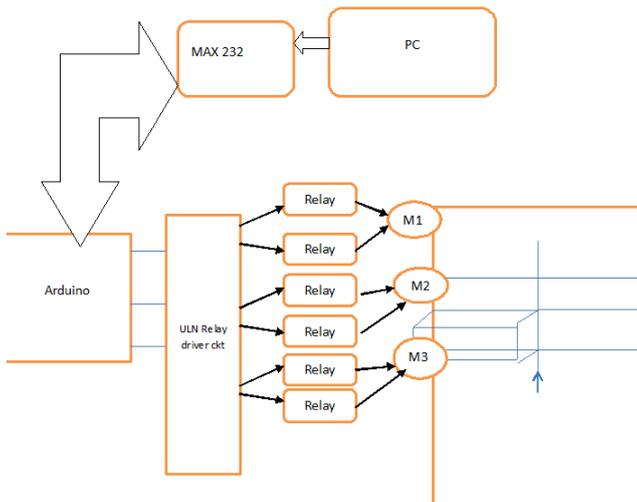
Fig.1: Block diagram of Medicine place finder

4. DESIGN OF SYSTEM:

System consists of, Arduino, LCD display, ULN Relay drive circuit. Arduino is world's most popular technology, which is a specially designed circuit board for programming and prototyping with Atmel microcontrollers. The Arduino is used for controlling the relay drive circuit. MAX 232, USB DB9 Connects to rack. The LCD display is used to display the message; the drawer is opened or closed. A ULN2003A is a high-voltage, high-current Darlington transistor array. In this project the relay drive circuit is used for the drive the relay. The relay is used for controlling the drawer.

4.1 Hardware Implementation

In this system, power supply is used to provide the power to the whole circuitry like Arduino, relay, relay drive circuit, LCD display. MAX 232 is the main component used for communication between pc and arduino. Relay drive circuit used to drive the relays which are help to opening or closing the drawers.

The Arduino Uno can be powered via the USB connection or with an external power supply. The power source is selected automatically. External (non-USB) power can come either from an AC-to-DC adapter (wall-wart) or battery. . Leads from a battery can be inserted in the GND and VIN pin headers of the POWER connector. The board can operate on an external supply of 6 to 20 volts. If supplied with less than 7V, however, the 5V pin may supply less than five volts and the board may be unstable. If using more than 12V, the voltage regulator may overheat and damage the board. The recommended range is 7 to 12 volts.

Each of the 14 digital pins on the Uno can be used as an input or output, using pin Mode, digital Write, and digital Read functions.

4.2 Software Implementation:

For Software Implementation we have used "Arduino 1.6.5". In Software Implementation, The main part is programming of the "Arduino" microcontroller and interfacing of each device like LCD Display, Relay drive circuit. Once the power supply is given hardware circuit is get initialized.

Rather than requiring a physical press of the reset button before an upload, the Arduino Uno is designed in a way that allows it to be reset by software running on a connected computer. One of the hardware flow control lines (DTR) of the ATmega8U2/16U2 is connected to the reset line of the Atmega328 via a 100 Nano farad capacitor.

4.3 Flowchart:
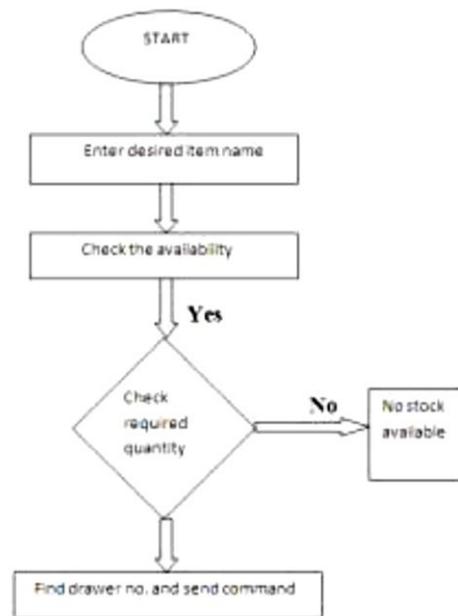
4.4 Components of Hardware in System:

The components of hardware implementation are as follows:

4.4.1 Arduino:

The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins,6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started.

4.4.2 Relay:

A relay is an electrically operated switch. . Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal.

4.4.3 Power supply

Power supply is main component of the circuit. Power supply is provided to microcontroller and other device from direct ac lines or from AC to DC adapter.

5. CONCLUSIONS:

The domain of this project is "Embedded system technology", in Healthcare to help the pharmacist for managing their stock and select the medicine using computer program and find the place of tablet automatically. Medical store automation will help to reduce time as well as burden on shop keeper or workers.

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