

MEDICINE VENDING MACHINE

Mahima Mehra
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
mahiemehra04@gmail.com

Vidhi Mehta
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
vvmehta553@gmail.com

Rajat Maurya
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
mauryarajat85@gmail.com

Purav Rawal
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
purav.rawal07@gmail.com

Abstract: Vending Machine as we all know is a machine which can vend different products which is more like an automated process with no requirement of human intervention which we normally see in fast moving cities because of fast paced life. The Medicine Vending Machine as the name suggests is a vending machine that will dispense the required medicine as per the user's choice. It provides an all-encompassing solution to an individual looking for immediate symptomatic relief for trivial health problems. It can also decrease the current costs of open medicine cabinets. By having an over-the-counter vending machine in the

workplace, worksites without clinics or pharmacies can benefit from increased work efficiency and avoid underperformance of ill employees. Moreover, it prevents hours wasted waiting in queues at clinics for trivial problems like colds and headaches. This situation gets especially magnified when a location is suffering from a localized infestation.

I.INTRODUCTION

Medicine Vending Machine is although not a new concept in its entirety, it could prove to be useful and hence important in developing countries like India where healthcare is utmost critical. Degrees of social status are closely linked to health inequalities. Those with poor health tend to fall into poverty and the poor tend to have poor health. According to the World Health Organization, within countries those of lower socioeconomic strata have the worst health outcomes. Health also appears to have a strong social component linking it to education and access to information. In the current generation where everything is automatic people are obviously going to prefer automatic machines. This is the biggest advantage of our project. The another advantage of our project is the use of RFID Card instead of coins or money or any other smart cards. These machines are more safe to use and many of the hospitals do have them. They give the clients the free choice to purchase the products at any time of the day. They reduce the overhead costs by not hiring the staff, They increase the profit. These Machines are very easy to manage as nobody has to be there to sell any goods, You need only the machine's

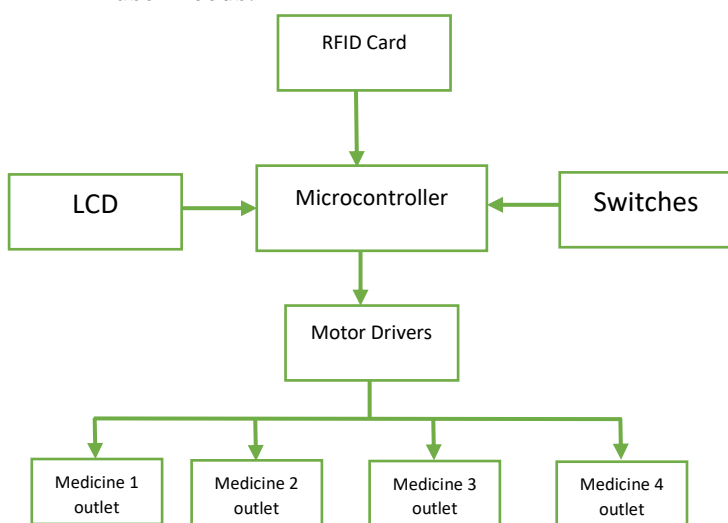
installation and you can simply monitor its progress. It is time conscious.



MEDICINE VENDING MACHINE

II. DESIGN METHODOLOGY

The basic theme of this paper involves dispensing medicines that the user needs. A RFID Card is used as an input sensor. The input provided by the user through the buttons is then forwarded to the microcontroller for processing forward. The microcontroller with the motor drivers dispenses the required medicine that the user needs.



Those motor drivers control the process of rotation of the motor. The motor rotates the

spring attached to it. Then the simultaneous medicine falls and arrives at the outlet. This whole process is automatic as no human intervention is required.

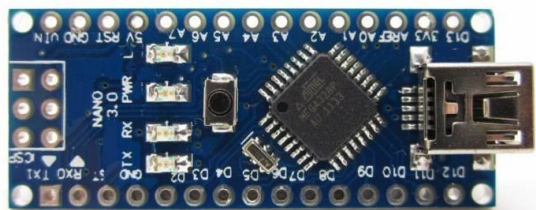
RFID CARD SYSTEM

RFID is an acronym for “radio-frequency identification” and refers to a technology whereby digital data encoded in RFID tags or smart labels (defined below) are captured by a reader via radio waves. RFID is similar to barcoding in that data from a tag or label are captured by a device that stores the data in a database. RFID belongs to a group of technologies referred to as Automatic Identification and Data Capture (AIDC). AIDC methods automatically identify objects, collect data about them, and enter those data directly into computer systems with little or no human intervention. RFID methods utilize radio waves to accomplish this. At a simple level, RFID systems consist of three components: an RFID tag or smart label, an RFID reader, and an antenna. RFID tags contain an integrated circuit and an antenna, which are used to transmit data to the RFID reader (also called an interrogator). The reader then converts the radio waves to a more usable form of data. Information collected from the tags is then transferred through a communications interface to a host computer system, where the data can be stored in a database and analyzed at a later time.



MICROCONTROLLER

The Atmel 8-bit AVR RISC-based microcontroller combines 32 kB ISP flash memory with read-while-write capabilities, 1 kB EEPROM, 2 kB SRAM, 23 general purpose I/O lines, 32 general purpose working registers, three flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter, programmable watchdog timer with internal oscillator, and five software selectable power saving modes. The device operates between 1.8-5.5 volts. By executing powerful instructions in a single clock cycle, the device achieves throughputs approaching 1 MIPS per MHz,



balancing power consumption and processing speed.

LCD DISPLAY

A liquid-crystal display (LCD) is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. Liquid crystals do not emit light directly, instead using a backlight or reflector to produce images in color or monochrome.^[1] LCDs are available to display arbitrary images (as in a general-purpose computer display) or fixed images with low information content, which can be displayed or hidden, such as preset words,

digits, and seven-segment displays, as in a digital clock. They use the same basic technology, except that arbitrary images are made up of a large number of small pixels, while other displays have larger elements. LCDs are used in a wide range of applications, including LCD televisions, computer monitors, instrument panels, aircraft cockpit displays, and indoor and outdoor signage. Small LCD screens are common in portable consumer devices such as digital cameras, watches, calculators, and mobile telephones, including smartphones. LCD screens are also used on consumer electronics products such as DVD players, video game devices and clocks.



LCD Display

MEDICINES

Medicines form an integral part of this project as they are the main product, which are to be dispensed according to the user's input. Only medicines that can be consumed without prescriptions can be used by the machine as anything else would be illegal as it would require a genuine license of a medical practitioner. These medicines are those which can be consumed on appearance of symptoms without consulting a doctor. However, they do not cure if the illness is of a more serious nature.



Examples include common cold, indigestion, vitamin tablets for deficiency, stomach upsets, cough etc.

III. SOFTWARE IMPLEMENTATION C LANGUAGE:

C is a procedural programming language. It was initially developed by Dennis Ritchie between 1969 and 1973. It was mainly developed as a system programming language to write operating system. The main features of C language include low-level access to memory, simple set of keywords, and clean style, these features make C language suitable for system programming like operating system or compiler development.

Many later languages have borrowed syntax/features directly or indirectly from C language. Like syntax of Java, PHP, JavaScript and many other languages is mainly based on C language.

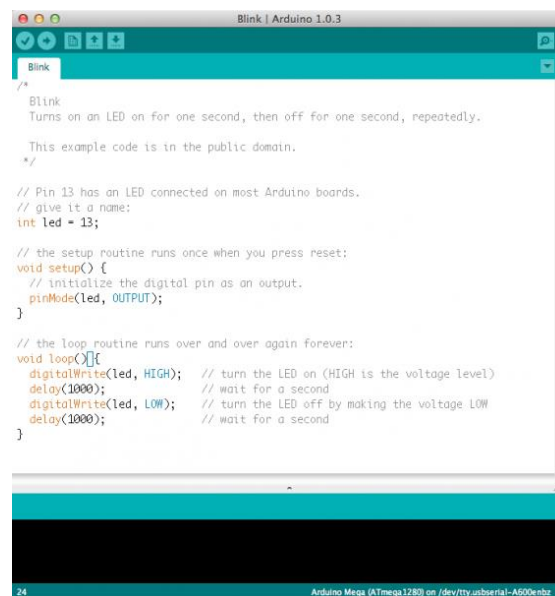


C Programming language

ARDUINO

Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.

The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board – you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the microcontroller into a more accessible package.



IV. CONCLUSION

It is important to consider how this technology may affect quality of medication delivery and use. With quality as a major focus of the new wave of health

care, how will medication vending machines fare? If such mechanisms are inevitable, how will pharmacists complement this service? Will virtual pharmacist patient consultations be the new norm? Will such technology improve or worsen the existing patient-pharmacist relationship? How will the technology affect older adults who may be at increased risk for adverse effects from medications? Many such questions remain unanswered. Nonetheless, as pharmacists looking to our future, we must consider quality services that hold value to our patients and other health professionals. As technology is sure to evolve, pharmacists must look toward quality improvement in patient care services and provide due expertise in medication management so such technology becomes integrated as a fundamental way of pharmacy practice, regardless of setting. In this changing culture of health care and technology, now is an opportune time for pharmacists to drive the expectations of patients and other health professionals about the value of pharmacist services within the patient care continuum.

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Mahima Mehra
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
mahiemehra04@gmail.com

Vidhi Mehta
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
vvmehta553@gmail.com

Rajat Maurya
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
mauryarajat85@gmail.com

Purav Rawal
Department Of Computer Engineering
Thakur Polytechnic
Mumbai,India
purav.rawal07@gmail.com