

IMPLEMENTATION OF SELF SERVICE MEDICINE VENDING MACHINE IN RURAL AREAS

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Abstract: This abstract is based on medicine vending machine that is used for helping people who are living in rural areas. This machine can also be installed in medical shops or pharmaceutical stores for supply of medicine for the people. ATM is a machine which delivers the medicine in emergency cases and ensure availability of drugs 24x7. This is basically a government led project for supplying medicines for the people in the villages and towns. Here this machine has a RFID detector for detecting adults, children and middle-age persons then it will give the medicines based on their disease chosen by the patient. Finally this machine will supply all the medicines to all age group persons.

Index Terms

ATM-any time medicine, drugs, patient, RFID Detector

I. INTRODUCTION

Now-a-days in this fast moving world appliances which are completely automatic are preferred. A few people in India pass on because of absence of analysis in first put and non accessibility of drugs on time. ATM is a device can fetch out the medicines automatically for the basic common symptoms for free of cost. The medicine provided by the machine are only for the timely relief and in emergency case, where the person has to meet the doctor further.

II. LITERATURE SURVEY

After hearing the expression “distributing machine”, some are shocked to realize that candy machines have started in antiquated Greece. The primary known vending machine was designed by the Greek mathematician and designer Hero of Alexandria around 215 BC. These first candy machines were situated in Egyptian sanctuaries and administered sacred water in return for coins. They are used for different purpose like for dispensing chocolates, beverages, snacks etc. Clients will have the capacity to get essential Over-The-counter solution (24x7). Minor diseases has an interesting method for welcoming individuals amidst the night when drug stores are as now shut[2].

III. BLOCK DIAGRAM

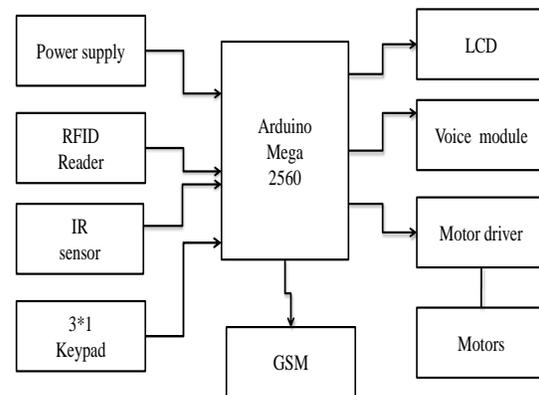


Fig:Block Diagram of proposed system

A. Arduino Mega 2560

The Arduino Mega 2560 is microcontroller board based on the ATMEGA 2560. It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTS (hardware serial ports), a 16 MHz crystal oscillator, 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 a AC-to-DC adapter or battery to get started. The Mega is compatible with Most shields designed for the Arduino Duemilanove.

B. Power supply

The Power Supply is a Primary requirement for the project work. The required DC power supply for the base unit as well as for the recharging unit is derived from the mains line. For this purpose center tapped secondary of 12V-0V-12V transformer is used. From this transformer we getting 5V power supply. In this +5V output is a regulated output and it is designed using 7805 positive voltage regulator. This is a 3 Pin voltage regulator, can deliver current up to 800 milliamps.

C. RFID reader

It is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags. An RFID tag is an object that can be applied to or incorporated in a product, animal, or person for the purpose of identification using radiowaves. Some tags can be read from several meters away and beyond the line of sight of the reader.

D. IR sensor

An infrared sensor is an electronic device, that emits in order to sense some aspects of the surroundings. These types of sensors measures only infrared radiation, rather than emitting it that is called as a Passive IR Sensor.

E. Keypad

The data base relevant to all the general diseases will be stored in the data base and the users have to type the disease name using keypad. upon typing the name the dispenser will dispense the relevant medicine that particular disease.

F. LCD

Liquid crystal display is an electronic display module and find a wide range of applications. a 16x2 lcd display is very basic module and is very commonly used in various devices and circuits.

G. Voice Module

Advancement in technology has developed an intelligent man-machine interface technique. That facilitates computers or machines or robots to be operated using the voice commands.

H. Motor Drivers

Motor Driver will drive DC motor depending upon signal received from arduino.

I. Motors

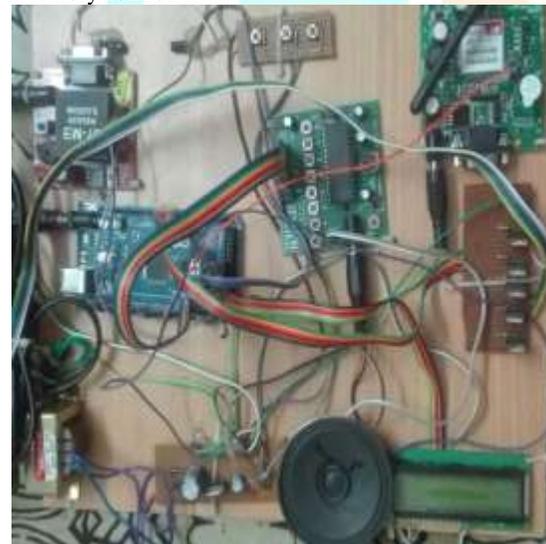
An electric motor is an electrical machine that converts electrical energy in to mechanical energy. The reverse of this is the conversion of mechanical energy in to electrical energy and is done by an electrical generator, which has much in common with a motor.

J. GSM

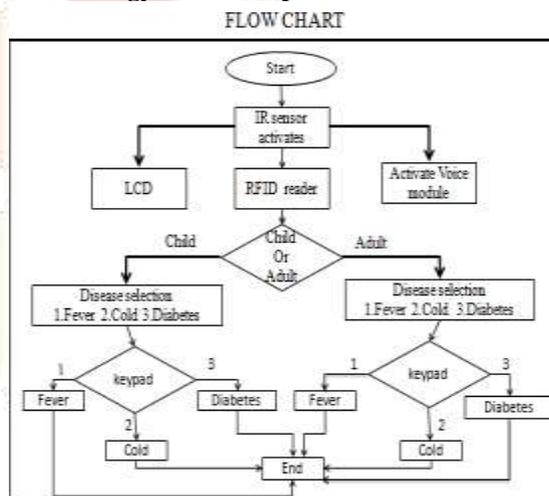
It is used to send and receive message from the dispenser to the inventory control.



Fig2: Implementation of self service medicine vending machine in rural areas.



Methodology and Description



Arduino mega 2560 is the heart of this project. The Villagers are provided with RFID tags, the person in need of medicine visits the vending machine. On swiping RFID card the personal data is read. The machine automatically asks for health status, based on the response of a consumer the medicine is provided.

Advantages

- 1.It self-serviceable.
- 2.Reducing human effort.
- 3.Less maintainance cost.
- 4.Understandable for literates and illiterates.

Applications

- 1.It will be very useful in day to day life for common people.
- 2.This can be implemented everywhere such as a shopping malls.
- 3.This system can be used by the defence organization such as military,airforce etc.
- 4.It can be implemented on National Highways.

Results:



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Conclusion:

From this concept we conclude that the self-service medicine vending machine is technically feasible to the people. It is based on the Arduino Mega2560 which provides GSM service. It gives availability of medicines all time. It is very helpful for rural people. Every individual getting to the machine would be given a novel ID utilizing which the person can be recognized.

Future scope

1. Video conferencing between doctor and patient can be made using 3G system.
2. Interfacing of different biomedical instruments, for example BP meter, beat meter, temperature meter etc.
3. We can implement the biometric system and eyeball scanner.