Automatic Medicine Vending Machine

G Sriniviasachar[1], Pavithra B [2], Sumana R[3], Swati kumari[4], T Divya[5]
[1]Assistant Professor
[1, 2, 3, 4, 5] Atria Institute of Technology, AnanadNagar Bangalore-560024

Abstract- *The medicine vending machine as the name suggests is a vending machine that will dispense the required medicine as per the user choices. It provides the solution for the individual user looking for immediate symptomatic relief for health problems.By relieving small symptoms at the work, it will eliminate both presentism and absenteeism's the workplace.*

Keywords- IOT, Embedded C programming, MplabIDE..

I. INTRODUCTION

Old age people caring is difficult in countries, family will be responsible for care and requirements of the old age people Automatic vending machine for aged people fail to take there medicine on time In todays life our most of the familiar are nuclear. user to decrease the currents cost of the open medicine shop As vending machine is a worksite without clinic's can benefit from increased work efficiency and also avoid the underperformance of the ill employee .Fig 1 will represent the vending machine for the medicine purposes.As we are not finding only the age people but also the normal people In this the basic medicines are been used like vicks, action 500,for common cold, and ORS packets as the help drink.

Fig.1. Medicine Welding Machine

Purpose

As technology has been advanced so we all processes has become automatic but for medicine purpose there is no automatic method so this vending machine can help to supply medicines in effective and easy manner. Now a days absence of twenty-four-hours anywhere medicine provider.Government is providing medicine at low cost but it is not reaching for people.

As we know that medicine is very important to everyone now a days especially for old age people they can't reach out to medical stores everytime. Hence these vending machines can provide medicines even without prescription which is very effective method to reach out for general method. And also it works with consistency and accuracy.
In village if people is having some general symptoms like common cold, fever, headache they can reach out to general medicines soon even without prescription.

As we know now a days there is very corruption government is giving free or less cost medicine to poor people but its not reaching for them. This vending machine will be helpful in such cases.

Even on highways medicines are not found . In case of emergency it is very difficult to find medicines on highways. When this vending machine is installed on highway roads it is very helpfuland also during night time medical stores will be closed. In case of emergency this vending machine can be very helpful and effective.

II. PROBLEM STATEMENT

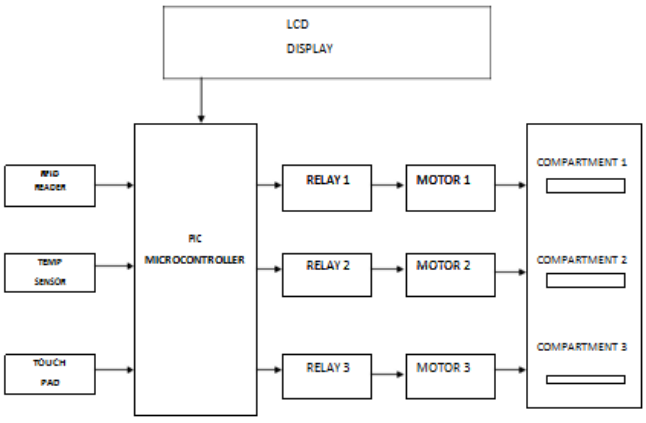
People in India die due to lack to diagnosis in first place and non-availability of medicine on time.Diagnosis is always a concern for the people living in rural area. At the same time medicine availability also has a major impact excluding the factor about complete cure. The aim of this prototype is that temporary relief is to be given out that can give people a better chance for resisting the health from withdrawing before they are able to reach doctor. Major advantage is that people will be able to access the drugs via patient kiosks in public places such as malls, bus stands, railway stations, on the highways, areas where medical stores are limited.

medicines automatically fetched by the device for the basic common symptoms for free of cost, and the medicines provided by the machine are only for the timely relief and in emergency case, where the person have to meet the doctor further. People at rural places cannot get access to medicines

that are providing to them freely by the government. Regular replenishment can help in not only tracking usage pattern and thus taking precautionary measures but also ensure availability of drugs 24x7.such as lack of poverty and illiteracy in India, The device is designed taking under concern. In the age of automation everyone expects a fully controlled automated device. Automated dispensing machines decentralized medication distribution systems are now widely used in many hospitals and that provide computer-controlled storage, dispensing, and tracking of medications have been recommended as one potential mechanism to improve efficiency and patient safety,soits used in many hospital.

The the biggest advantage of this project is Now-a-days in this fast moving world, appliances which are completely automatic are preferred.. The system is fully controlled by the 16 bit PIC micro controller. No doubt that these machines can enhance the efficiency of medication distribution, but there is one problem that is capacity to reduce medication errors is controversial and depends on many factors, including how user design and implement the systems. Still, we are consent in providing the following reasons and experiences to support our position that automated dispensing machines improve patient safety. Automated dispensing machines provide secure medication storage on patient care units, along with electronic tracking of the use of narcotics and other controlled medicines.dispensing machines provide secure medication storage on patient care units, along with electronic tracking of the use of narcotics and other controlled medicines. dispensing

III. SYSTEM OVERVIEW



Working

The 16F877A PIC microcontroller is used. A microcontroller is a small computer on a single integrated circuit. A microcontroller contains one or more cpu along with memory and programmable input output peripherals. Microcontrollers are used in automatically controlled products and devices such as implantable medical devices, automobile engine control system, appliances, power tools and remote controls.

A sensor is a device that converts a physical quantity into an electrical signal. A temperature sensor is a device typically, a thermocouple or RTD (resistance temperature detector) that provides for temperature measurement through an electrical signal.

RFID readers convert radio waves return from the RFID tag into a form that can be passed on to a controller, which can make use of it. RFID tags and readers have to been tuned to the same frequency in order to communicate. Radio Frequency Identification uses electromagnetic fields to automatically identify and track tags.

A touchpad or a track pad is pointing device featuring a tactile sensor a specialized surface. It is device that translates the motion of fingers on a surface into relative position of the cursor on the screen.

LCD which stands for Liquid Crystal Display is a flat panel display or other electronically modulated optical device that uses the light modulating properties of liquid crystals. LCDs allow displays to be much thinner than cathode ray tube(CRT) technology. LCDs are very thin but are actually composed of several layers. Those layers include 2 polarized panel, with a liquid crystal solution between them.

Relay is an electromagnetic switch which is used to switch high voltage or current using low power circuits. Relays are switches that open or close circuits electromagnetically or electronically.

All motors have a control device called a motor controller to start and stop the motor. It is the actual device that energizes and de-energizes the circuit of the motor so that it can start or stop.

Scope

This study focuses on the design and implementation of Medicine Vending Machine that can dispense different medicine through dropping a specified Medicine by taking the reference of button. There are different types of medicines in a machine which user can take,the machine accepts money through RFID tag and will not accept any other type of money. Once the tag has been detected, the machine automatically dispenses the right medicine which is choosen

by the user after .No further human intervention required the automatic medicine vending Machine will cater the needs of the customers.. The machine is user-friendly and is simple to operate. The customers will only have to deal with the RFID tag to be dropped to the machine which will correspond to the medicine to be dispensed. With this, lower cost will be minimized and it will also give entrepreneurs the opportunity to attract more customers with this innovation.

By implementing medical ATM, simple medical problems will be diagnosed with an easy reach. This system can be further improved to diagnose the health problem also. A central platform can be provided for patience to interact with specialists of fields through video conferencing i.e. to provide a health ATM service. One more development is that to provide automated e-emergency diagonisation and pharmacy for patients which can be meant that at the health ATM, when a card being inserted the whole body of the user will be scanned and the problem will be identified and rectification suggestions will be given. If it is unable to identify, then a specialist will be connected through video conference. Video conferencing between doctor and patient can be made using 3G system.

GPS that can give proper result is very high.Interfacing of various biomedical instruments that is nothing but BP meter, pulse meter, temperature meter etc.Prospective customer survey / study has been planned in order to understand Indian users for such a machine.for each block and module development would be startedBlock diagram would be detailed out.Legal, medical and administrative aspects would be studied for feasibility study and further changes in design.Further hurdles would be funds, timely resource availability & formation of think-tank team. RFID is used in which conjunction with barcode technology to match patients or user to medicines.

GPS that can give output in very high speed .Interfacing of various biomedical instruments that is nothing but BP meter, pulse meter, temperature meter etc.Prospective customer survey / study has been planned in order to understand Indian users for such a machine.Block diagram will be detail out for every block and after that module development would be starte.Legal, medical and administrative aspects would be studied for feasibility study and further changes in design.Further hurdles would be funds, timely resource availability & formation of think-tank team.In which RFID is used in conjunction with RFID technology to match patients to medicines.

IV. OBJECTIVES

Benefits to the pharmacies/hospitals:

1) Implement a business idea that would provide a solution to a particular problem with use of microcontrollers.

2) Increased vigilance of the service providers collaborated with management of the hospital for managing machine's faults.

3) Raise operational efficiency through real time medicine stock management

4) 24 X 7 tracking of vending machine right from inventory till location.

5) Increased up sell of medicines by limiting stock out occasion using latest IoT enabled solution proving vital for demand forecast.

6) User identification.
7) Selection of requirements.
8) e-payment
9) Delivery using slider arrangement and servo controlled mechanism.

V. METHODOLOGY

1. all operation is controlled through software human interfacing is minimized because of our project.
2. human interfacing is minimized so maintenance is lowered.
3. works continuously & gives consistency will give give more accuracy.
4. It is a Autonomous device.
5. The system used is microcontroller based.
6. at any location Too little space is required for it to set for any operation.
7. understand the operation taking place to LCD display which makes very easy .
8. There is also facility of measurement of various parameter 9. Simple circuit which can easily be understood.
9. Give more accuracy, works .

Expected Results

The design for the machine will successful and we will able to get the proper output. The microcontroller was works on the basis of the code. The loads were operated in accordance with the code which was implemented by using

MP lab software. When we swipe the RFID card,a device is activated, once we had an access to a device we can submit symptoms through button and medicine will be given from an outlet. Then machine displays a message . Now we will receive medicine from the machine.

VI. DESIGN METHODOLOGY

The block diagram basically explain about the vending machine.Smart card is used for input sensor then the input given by the user is then send to microcontroller for processing to proceed forward.The motor driver used to drives the medicine cabinet having the medicine the user is need for that particular time Finally the medicine will arrives at the outlet then the user can get there medicine from the outlet in which they are fully automatic no need of manual support which is shown in the fig 2.

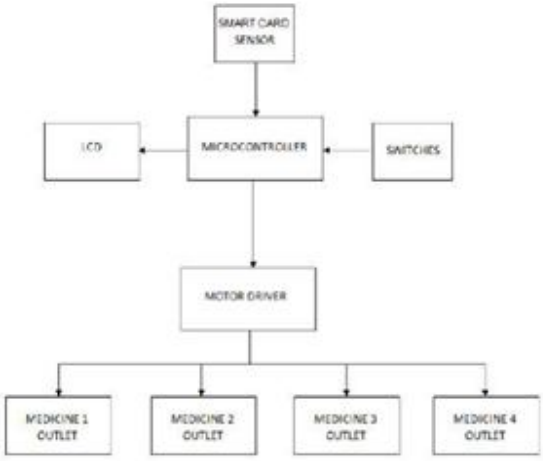


Fig 2: Block Diagram

SMART CARD

Fig 3 shows about the smart card system .Then the smart card reader then uses the RFID[radio frequency identification and detection] which is used for communication and also used for authenticate tags that are accessed to any products.

Radio frequency identification and detection make use of radio waves in order to identify the users and any objects . fig 4 will be the RFID

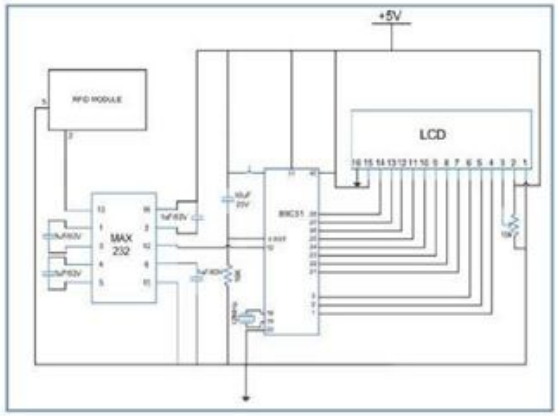


Fig 3 circuit digram[1]

RFID MODULE[9]

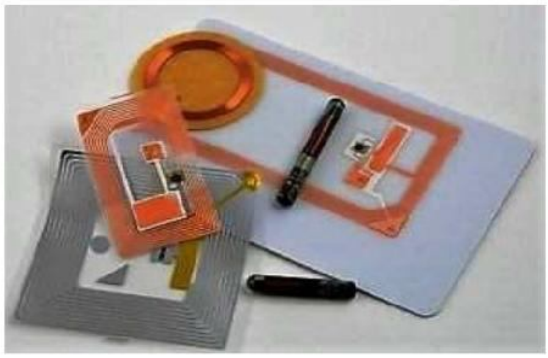
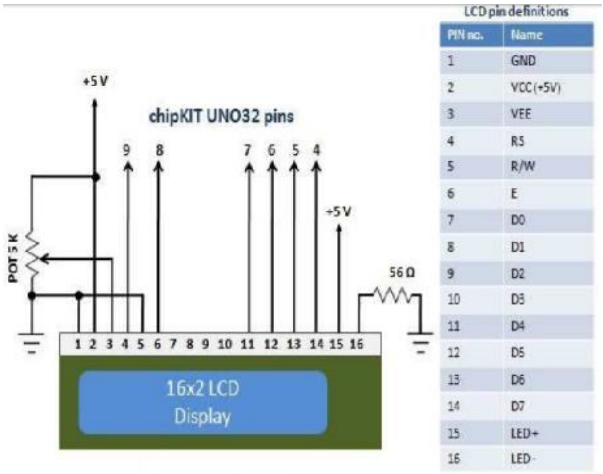


Fig 5 RFID[1]

MICROCONTROLLER

The AT89C51 is low power,high performance CMOS 8-bit microcontroller with 8k bytes of in system programmable flash memory.The device is manufactured using Atmel's high density non volatile memory technologyandcompatible with the industry standard instruction set, Flash memory allows the memory to be reprogram This will provide more cost-effective solution to many Embedded control application.



LCD pin definitions

PIN no.	Name
1	GND
2	VCC (+5V)
3	VEE
4	RS
5	R/W
6	E
7	D0
8	D1
9	D2
10	D3
11	D4
12	D5
13	D6
14	D7
15	LED+
16	LED-

Fig 6 LCD PIN Diagram[11]

LCD DISPLAY

Liquid crystal display is electronic display used For finding wide range of applications These modules are preferred over seven segments LCDs are economical, easily programmable, have no limitation of displaying special and even custom characters, animations and son on.A 16x2 LCD means it can display 16 characters for each lines.

ADVANTAGES:

- Automatic machine similar to ATM.
- Using smart card instead of coins.
- Improves the efficiency and patient safety.

APPLICATION:

- Major application is for people who are staying in villages and where medicalstorewill not be available. If they are getting normal fever also they have to wait till morning to come outside and get medicine so for them its helpful.
- In government hospital the government provides free medicine but some people don't know this so they can't get advantages from this and some shopkeepers will buy and sell it which is illegal.
- And also at night time medical stores will be closed if u need any medicine immediately the you can get in this machine.

Features

- 5× 8 and 5 × 10 dot matrix possible.
- Low power operation support 2.7 to 5.5V.
- Wide range of liquid crystal display driver power.
- Liquid crystal drives waveform.
- A (One line frequency AC waveform).
- Correspond to high speed MPU bus interface.
- 4-bit or 8-bit MPU interface enabled.
- 80 × 8-bit display RAM (80 characters max.).
- Automatic reset circuit that initializes the controller/driver after power on.
- Internal oscillator with external resistors.
- Low power consumption.

Results

The plan for the machine was effective and we had the capacity to get the normal yield. The microcontroller was chips away at the premise of the code. The heaps were worked as per the code which was actualized by utilizing MP lab programming. When we swipe the brilliant card, machine or a gadget is enacted, when we had an entrance to a gadget we can submit indications through touch screen and drug will be given from an outlet. At that point machine shows a message specifically prescription box region. Presently we will get prescription

V. CONCLUSIONS

1. By actualizing therapeutic ATM, straightforward medicinal issues will be determined to have a simple reach. This framework can be additionally improved to analyze the medical issue too. A focal stage can be given to tolerance to cooperate with masters of fields through

video conferencing for example to give a wellbeing ATM administration

2. One greater advancement is that to give robotized e-crisis diagonisation and drug store for patients which can be implied that at the wellbeing ATM, when a card being embedded the entire body of the client will be checked and the issue will be distinguished and amendment proposals will be given. On the off chance that it is unfit to distinguish, at that point an expert will be associated through video meeting
3. The plan and usage of Health programmed Medicine Vending Machine is depicted in the paper. Therefore this candy machine will defeat the issue of inaccessibility of medicinal offices at long courses train, thruways country region and so on. It can likewise be executed at transport stops, railroad station, and petroleum siphons.
4. Automated medicinal ATM framework assumes its significant job in lodging territories, airplane terminals, and country regions. Usage of this framework diminishes labor 24 hours accessibility administration and furthermore lessens time utilization
5. It is critical to think about how this innovation may influence nature of medicine conveyance and use. With quality as a noteworthy focal point of the new rush of social insurance, by what method will drug candy machines charge?

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