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Autonomous All Time Medicine Counter for Medicine Self Dispensing

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Abstract: Vaccination is assumed to be a pivotal part in looking after wellbeing, averting sickness, overseeing, constant conditions and curing ailment.

All Time Medicine(ATM) is a machine which delivers the medicine in emergency cases and ensure availability of drugs 24x7 and hence the name "All Time Medicine".

ATM will be very useful in saving life in case of an accident on highways, remote areas, rural areas and places where medical stores are not within the reach in case of emergency. At least first aid can be made easily accessible with the help of this system. This project consists of Advanced RISC Machine (ARM) processor which controls the other sub systems such as RFID Reader, medicine dispenser, inventory control. RFID tag identifies the specific user. Medicine dispenser is the storage part of the machine which stores the medicine.

Keywords: Microcontroller, Dispenser, Motor Controller, LCD Display, RFID Reader.

I. INTRODUCTION

Several folks in India die due to lack of designation in initial place and non accessibility of medication on time. Problem arise when need of some medicine is urgent and drug-stores are not open or drug is not available in stock, especially during night time. In remote areas, rural areas and places where public turnover is less, the availability of medicines within the patient's reach is a critical issue. These are some of the main problems that are being faced by the society in present scenario. ATM will help in solving these problems by providing the medicines 24x7.

ATM-Any Time Medicine, where the device can send out medicines. Device can fetch out the medicines automatically for the basic common symptoms and the medicines provided by the machine are only for the timely relief and in emergency case where person should meet the doctor additional. People at rural places cannot get access to medicines that are providing to them freely by the government.

The aim of this project is that people would be able to access the drugs via patient kiosks in public places such as drug stores, malls, bus / railway stations, on highways, areas where medical stores are limited. The device is intended taking below concern, like lack of poorness and illiteracy in India.

II. LITERATURE SURVEY

A. "Med-e-lert Medication Pill Box Reminder Dispenser"

There are a large variety of medication administration assistance devices for non-professional users. Most of them are manual, providing multiple compartments called pill trays. The pill receptacle encompasses a range of compartments that may be full of medication. Each compartment will hold totally different sizes and combination of medicines. The user is required to take the medicine from each tray each day for a maximum of 28 days. It doesn't offer any alarm to point the time of taking the medication.

B. *International Journal of Technical Research and Applications e-ISSN: 2320-8163, www.ijtra.com Volume 4, Issue 3 (May-June, 2016), PP. 73-76*

It is necessary to provide medication to the aged person in time. Automatic pills vending machine is designed specifically for users who take medications without close professional supervision. It relieves the user of the error-prone tasks of administering wrong medicine at wrong time. The major components of this medication dispenser are a microcontroller interfaced with a Motor Controller, an Alarm system, a multiple pill dispenser. The major objective is to stay the device straightforward and value economical. The software used is reliable and stable. Elderly population will like this device because it avoids overpriced in home treatment.

C. *Smart Medication Dispenser: Design, Architecture and Implementation- Pei-Hsuan Tsai, Tsung-Yen Chen, Chi-Ren Yu, Chi-Sheng Shih, Member, IEEE, and Jane W. S. Liu, Fellow, IEEE.*

This paper presents the design associated implementation of an automatic medication dispenser specifically for users UN agency take medications while not shut skilled management. By relieving the users from the erring tasks of deciphering medication directions and administrating medications. consequently, The device will improve rigor in compliance and forestall serious medication errors. By taking advantage of programming flexibility provided by medication directions, the device makes the user’s medication schedule straight forward to stick and tolerant to timing whenever potential. This work is done collaborative by the medication scheduler and dispenser controller in an action-oriented manner. An advantage of the action-oriented interface between the components is extensibility, as new functions can be added and existing ones removed with little or no need to modify the dispenser control structure. The paper first describes the action - oriented design, major components and hardware and software structures of the smart device. It then provides an overview of the heuristic algorithms used by the medication scheduler and their relative merits.

D. *DeClaris, J.-W.; D-ATM, a working example of healthcare interoperability: From dirt path to Implications, Engineering Management, IEEE Transactions on, Volume: 46 , Issue: 3, Year: 2009 , Page(s): 4643 – 4645.*

Medicines is a vital half in taking care of prosperity, averting upset overseeing, endless condition and natural process illness. Unsurpassed Medicine (ATM) is a machine which conveys the medication in crisis cases and guarantee accessibility of medications 24x7 and thus the name "Record-breaking Medicine". ATM will be extremely valuable in sparing life if there should arise an occurrence of a mischance on parkways, remote ranges, provincial territories and spots where therapeutic stores are not within the event of crisis. In any event first help can be made effectively open with the assistance of this framework. This venture includes of Advanced Architecture Machine(ARM) processor that control the opposite sub framework , for example, RFID Reader, Global System for Mobile correspondence (GSM), pharmaceutical allocator, and stock control. RFID tag identifies the specific client. GSM sends the message to the stock management once the solution ought to be refill. Pharmaceutical authority is that capability a part of the machine that stores the prescription.

E. *Dhanush j. Nair, Sunny nahar, “ ATM transaction : A new time based approach research paper “, International journal of science, engineering, and technology research(IJSETR), volume 4, issue,6, june 2015, ISSN:2278-7798.*

The purpose of this analysis paper is to introduce a replacement thought of OTP (one time countersign) and providing details of the close to by ATM and therefore the quantity of money currently available in the nearby ATM machine if there is a shortage of money in ATM we are currently using for ATM transactions .There is a limitation on the amount of money being withdrawn from the ATM machine. As you all know there is a limit of Rs.25000 being withdrawn at a time that is being counted united group action. This analysis permits United States to withdrawn outsized quantity of cash among a time period of 5 minute exploitation OTP that is counted united group action and therefore the user utilize this services for giant quantity of cash being withdrawn per day. Different bank has totally {different |completely different} per day group action limit.

III. METHODOLOGY

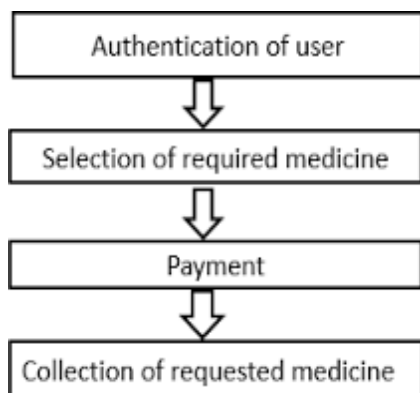


Fig 1: Methodology of all time medicine counter

The machine can convey for the most part Over the Counter (OTC) drugs, torment executioner, first-help items and so on. So it will be exceptionally valuable to the general public. Medication administering procedure is done in four stages.

- 1) Validation of enrolled client.
- 2) Determination of required prescription.
- 3) Installment.
- 4) Accumulation of asked for prescription.

To start with the client needs to enroll in a specific approved focus with recommended drugs. At that point client will be furnished with RFID Tag and secret word. Amid exchange client must first swipe the card and enter the Personal Identification Number (PIN), so that exclusive approved individual can utilize the machine. Ask for the required solution ought to be made by the client by looking through the menu.

A. Block Diagram

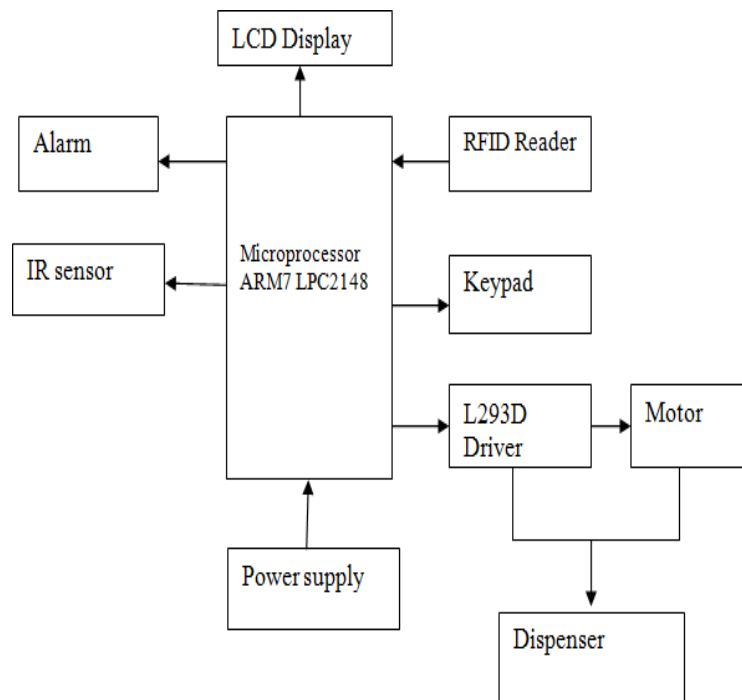


Fig 2: Block diagram of all time medicine counter

B. Working

The block diagram of All Time Medicine is as shown in the above Figure. ARM is the main part of the system. It controls other subsystems like display, dispenser and inventory control.

- 1) ARM: It is the main part of the system where the other components will be controlled by it.
- 2) Display and keypad: The main function of the display is to show the registered medicines available in the ATM machine and with the help of keypad the customer can enter the name of the required medicine.
- 3) Inventory Control: Controlling the inventory of drugs is critical to the functioning of ATM. The inventory controller continuously monitors the level of each medicine.
- 4) Cash Unit: If the prepaid balance of the user is less, then they can buy the medicine through paying the money.
- 5) Medicine Dispenser: It is the storage part of the machine which stores all the medicines. It consists of series of springs in which the medicines are placed.
- 6) The data base relevant to all the general diseases will be stored in the data base and the user have to select the required medicine using Keypad. Upon selecting the medicine the Dispenser will dispense the medicine.
- 7) Government and private medicines can also be stored in the system. If the people use BPL card number then medicines will be dispensed free of cost.

IV. RESULT

From this idea we have a tendency to conclude that, the automated drugs coin machine is technically possible to the peoples. It gives availability of medicines all the time, also in rural areas and it is very helpful. It gives ease of access also. It is sales person-less service that relies on charge account credit.

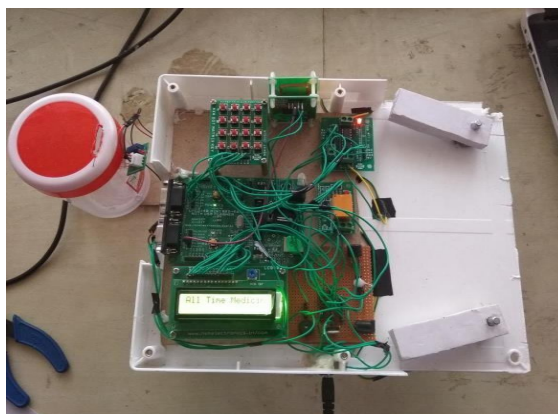


Fig 3: Model of the system

A. Advantages

- 1) It is very much portable that it can be installed in very less area.
- 2) No Individual person needed for maintenance.
- 3) Easy to use.
- 4) Provides 24/7 medicine facility.
- 5) Since disease name and relevant medicine will be stored in the database, the user will have to mention the disease name. The dispenser will dispense the medicine automatically for that disease.
- 6) Payment mode is simple so that each and everyone can utilize it.

V. CONCLUSION

From this idea we can infer that, the Autonomous all time medicine counter for medicine dispensing is actually attainable to the general population. It gives accessibility of solutions constantly, likewise in provincial regions. It is exceptionally useful. It gives straightforward entry too. It is sales representative less administration which depends on brilliant card. Along these lines the all time medicine counter for medicine dispensing will defeat the issue of inaccessibility of therapeutic offices at long courses prepare, parkways country region and so on. It can likewise be actualized at transport terminals, railroad station, and oil pumps. As Result of this venture the general population would have the capacity to get to the ATM 24*7. This machine can be introduced at transport stations, railroad stations and lanes of the city. Medications can be made accessible in reasonable rates. Every individual getting to the machine would be given a novel ID utilizing which the client can be recognized.

VI. FUTURE SCOPE

Prospective customer survey / study has been planned in order to understand Indian users for such a machine. Block diagram would be detailed out for each block and module development would be started. 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.

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