

Iot Based Patient Health And Smart Medicine Box

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Abstract - With swiftly growing population, it has come extremely delicate to cover as well as look after the health of the cases who suffer from habitual conditions especially in the case of aged people who find it delicate to look after their own characters. Hence we have come up with a smart system that can cover the health and the case's capsule. A smart sensor will continuously cover the health of the case and shoot the readings to the Arduino board. The Arduino board will also be connived with boxes that will contain specified medicines for the case. If the information matches the alarm will start to ring and will remind the case to take his medicine.

Index Terms- Chronic diseases, Dosage, Smart Sensor, Prescribed, Arduino board

I. INTRODUCTION

Now a day's trend in healthcare is to move routine medical checks and other health care services from sanitarium to the home terrain. A ultramodern healthcare IoT platform with an intelligent drug box along with detectors for health monitoring and opinion is proposed then. The life expectation of the human has been increased because of the advances in the drugs. For utmost cases, cases will forget to take the drugs at the specified time. As a design, the anticipated remedy becomes veritably delicate for senior people to follow a drug that has inadequate knowledge. The people who need to take lots of drugs daily will find it delicate to flash back the time and drug details. For those people, drug input at the right time is the veritably most important thing. Home healthcare plays a major part in reducing the consumption of treatment. People can get the services fluently through advanced health care technologies. Through IoT, we can give better treatment because medical fields are more functional than other fields. So IOT is stopgap in the healthcare field. In real-time monitoring, cases can ameliorate their quality of health.

II. LITERATURE SURVEY

Intelligent health monitoring system of the long- span road stayed requires the comprehensive knowledge of instrumentation, logical and information processing technologies with the knowledge and gests in design, construction, operation and conservation of road outfit for long- term covering the performance throughout its lifecycle. It's necessary to perform detector- grounded structural monitoring for relating the conditions in order to assure the structural safety and to estimate the functional performance. The considerations for planting a proper monitoring system are applicable detector instrumentation, robust signal accession, dependable signal processing, and intelligent signal and information processing. Detector and tackle instrumentation, signal transmission, signal accession and analysis are schematically described substantially. Fire and gas detectors are used to cover entire train system. And for

Passenger safety, we're attaching a wireless RF system. With this advanced outfit, the exact dangerous spot is known with in lower time.

Moving into a new period of healthcare, new tools and bias are developed to extend and ameliorate health services, similar as remotecase monitoring and threat for instalment. In this conception, Internet of effects (IoT) and Cloud Computing present great advantages by furnishing remote and effective services. In India numerous cases are dying because of heart attacks and reason behind that they aren't getting timely and proper help. To give them timely and proper help first we want to nonstop monitoring of patient health. The fixed monitoring system can be used only when the case is on the bed and this system is only available in hospitals. The system is developed for home use by cases that aren't in critical condition but need to be constant or periodically covered by clinician or family. In any critical condition the SMS is shoot to doctor or

any family member. In this paper, a prototype of a wireless health monitoring system able of transferring SMS related to the health status of the case is developed.

The healthcare covering systems has surfaced as one of the most vital system and came technology acquainted from the once decade. Humans are facing a problem of unanticipated death due to colourful illness which is because of lack of medical care to the cases at right time. The primary thing was to develop a dependable case monitoring system using IoT so that the healthcare professionals can cover their cases, who are moreover rehabilitated or at home using an IoT grounded integrated healthcare system with the view of icing cases are watched for better. A mobile device grounded wireless healthcare monitoring system was developed which can give real time online information about physiological conditions of a case substantially consists of detectors, the data accession unit, microcontroller(i.e., Arduino), and programmed with a software(i.e., JAVA). The case's temperature, heart beat rate, EEG data are covered, displayed and stored by the system and transferred to the croaker's mobile containing the operation.

The main advantage of this enabling factor is the combination of some technologies and dispatches result. The results of Internet of effects are synergetic conditioning gathered in colorful fields of knowledge like telecommunications, informatics and electronics.

With tone analysis which incorporates IoT a new paradigm that uses smart objects which aren't only able of collecting the information from the terrain and interacting the physical world, but also to be connected with each other through internet to change data as well as information.

III. EXISTING SYSTEM

In being system, case needs to get rehabilitated for regular monitoring of the case. It isn't possible once he she is discharged from the sanatorium. This system cannot be used at home. The being systems are measuring the health parameters of the case and shoot it through break break, Bluetooth protocolled. These are used for only short range communication to transfer the data. Not all the time the croaker can cost these details.

IV. PROPOSED SYSTEM

We propose a smart system that will continuously cover the case's health with the help of a detector and also at the same time will cover the cases daily cure of drug. Each drug box will have its own set of timing information which will be compared to a real world clock. However, the buzzer will go out and thereby remind the case to take his/ her drug. If the information matches. A data will also be maintained regarding the case's health and his diurnal input of drugs.

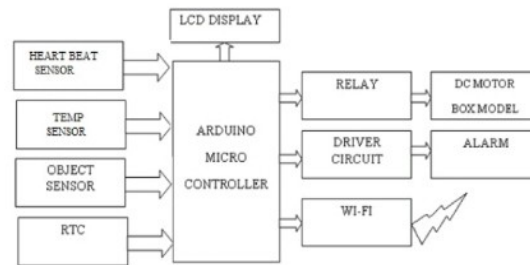


Fig.1: Block diagram of proposed system

V. WORKING AND METHODOLOGY

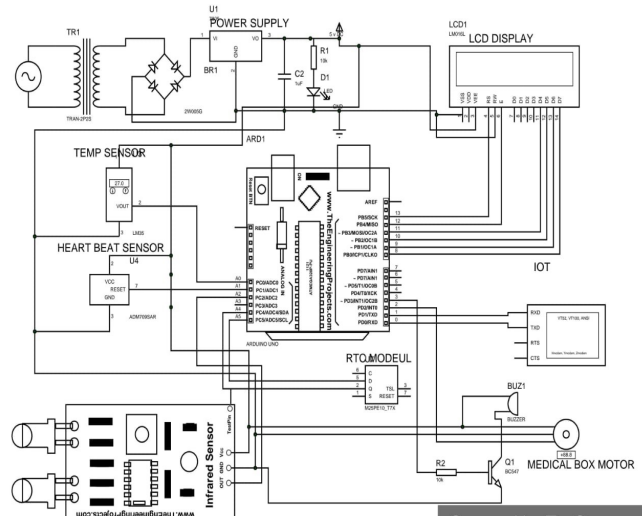


Fig 3 Pin Connection
INTERNET OF THINGS (IOT)

The Internet of effects (IoT) is the network of physical bias, vehicles, home appliances, and other particulars bedded with electronics, software, detectors, selectors, and connectivity which enables these effects to connect, collect and change data.

Iota involves extending Internet connectivity beyond standard bias, similar as desktops, laptops, smartphones and tablets, to any range of traditionally dumb ornon-internet-enabled physical bias and everyday objects. Bedded with technology, these bias can communicate and interact over the Internet, and they can be ever covered and controlled. With the appearance of driverless vehicles, a branch of IoT, i.e. the Internet of Vehicle starts to gain further attention.

The description of the Internet of effects has evolved due to confluence of multiple technologies, real- time analytics, machine literacy, commodity detectors, and beddedsystems.Traditional fields of bedded systems, wireless detector networks, control.

WI-FI

A Wi- Fi- enabled device, similar as a particular computer, videotape game press, smartphone or digital audio player, can connect to the Internet when within range of a wireless network connected to the Internet. The content of one or further (connected) access points called hotspots comprises an area as small as a many apartments or as large as numerous square long hauls. Coverage in the larger area may depend on a group of access points with lapping content. Wi- Fi technology has been used successfully in wireless mesh networks in London, UK, for Wi- Fi provides service in private homes and services as well as in public spaces at Wi-Fi hotspot set up either free- of- charge and commercially. Organizations and businesses, similar as airfields, hospices, and caffs, frequently give free- use hotspots to attract or help guests. Suckers or authorities who wish to give services or indeed to promote business in named areas occasionally give free Wi- Fi access.

As of 2008 further than 300 megacity-wide Wi- Fi (Muni- Fi) systems had been created. As of 2010 the Czech Republic had 1150 WI- Fi grounded wireless Internet service providers. Routers that incorporate a digital subscriber line modem or a string modem and a Wi- Fi access point, frequently set up in homes and other structures, give Internet access and internetworking to all bias tuned into them, wirelessly or via string. With the emergence of Mafia and Wipro (a movable Wi- Fi router) people can fluently produce their own Wi- Fi hotspots that connect to Internet via cellular networks. Now iPhone, Android, Bad and Symbian phones can produce wireless connections. One can also connect Wi- Fi bias in ad- hoc mode for customer- to- customer connections without a router. Wi- Fi also connects places typically without network access, similar as kitchens and theatre shanties

TEMPERATURE SENSOR

The word is a grip of thermal and resistor. Thermistors are considerably used as inrush current limiters, temperature sensors, tone- resetting overcurrent protectors, and tone- regulating heating rudiments. Thermistors differ from resistance temperature detectors (RTD) in that the material used in a thermistor is generally a ceramic or polymer, while RTDs use pure substance.

The temperature response is also different; RTDs are useful over larger temperature ranges, while thermistors generally achieve a advanced perfection within a limited temperature range (generally $-90\text{ }^{\circ}\text{C}$ to $130\text{ }^{\circ}\text{C}$).



Fig 3: Temperature Sensor

HEART BEAT SENSOR

A device for holding a twinkle detector in a fairly fixed relationship with respect to the end of a stoner's fingertip. Further particularly, a device is bared wherein a single distance of flexible material is formed into a base portion for holding the twinkle detector and three flexible bands that extend upward therefrom. The bands are acclimated to grip the stoner's fingertip. In one personification of the invention, the bands and base portion define au-shaped channel of constant cross-sectional area. In this personification a holding structure for the twinkle detector is wedge- shaped, the wedge- shaped holding structure being acclimated to be held by the base portion so that the cross-sectional area defined by each band and the wedge- shaped holding structure decreases along the longitudinal length of the base portion. In another personification of the invention, each band defines a lower cross-sectional area with respect to the base portion. Therefore both images.

OBJECT SENSOR

Photoelectric sensor a photoelectric detector, or photo eye, is a device used to descry the distance, absence, or presence of an object by using a light transmitter, frequently infrared, and a photoelectric receiver. They're used considerably in artificial manufacturing. There are three different functional types opposed (a retro reflective, and propinquity- seeing (a.k.a. diffused).

Types of Photoelectric Sensors It requires only a power source. The detector performs its own modulation, demodulation, modification, and affair switching. Some tone- contained detectors give similar options as erected- in control timekeepers or counters. Because of technological progress, tone- contained photoelectric detectors have come decreasingly.

LCD DISPLAY

LCD A liquid demitasse display(TV) is a thin, flat electronic visual display that uses the light modulating parcels of liquid chargers(LCs). LCs don't emit light directly. They're used in a wide range of operations including computer observers, TV, instrument panels, aircraft cockpit displays, signage, etc. They're common in consumer bias similar as videotape players, gaming bias, timepieces, watches, calculators, and telephones. LCDs have displaced cathode shaft tube (CRT) displays in utmost operations. They're generally more compact, feather light, movable, less precious, more dependable, and easier on the eyes. They're available in a wider range of screen sizes than CRT and tube displays, and since they don't use phosphors, they cannot suffer image burn-in.LCDs are more energy effective and offer safer disposal than CRTs.

Its low electrical power consumption enables it to be used in battery- powered electronic outfit. It's an electronically- modulated optic device.

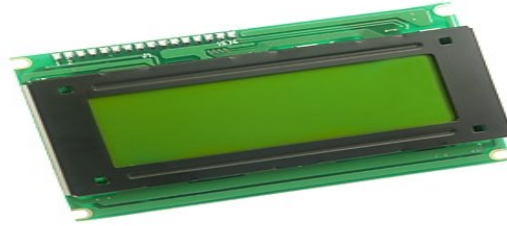


Fig 4 LCD Display

ALARM

An alarm offers a visual or audio alert on a problem or condition.

BUZZER:

A buzzer, sometimes known as a burglar alarm, is a warning tool that is primarily electrical and is found in vehicles, home appliances like microwaves, and game shows. It typically consists of a number of switches or sensors that are related to an Arduino microcontroller that ultimately decides whether as well as which button was pressed or if a predetermined amount of time has passed.

Upon detection, the control unit typically turns on a light next to the relevant switch or panel and emits a consistent or sporadic buzzing or beeping tone as a notice. The electromagnetic technology on which this instrument was first built was essentially an electrified bell minus the metal gong (which makes the ringing noise).

POWER SUPPLY:

A transformer is used to scale the ac voltage, which is normally 220V rams, down to the level of the required dc output. After being initially filtered by a straightforward capacitor filter to provide a dc voltage, a diode rectifier then generates a full-wave rectified voltage. Usually, there is some ripple or ac voltage change in the resulting dc voltage.

Even if the input dc voltage varies or the load attached to the output dc voltage changes, a regulator circuit eliminates the ripples and maintains the same dc value. Typically, one of the well-liked voltage regulator IC chips is used to do this voltage regulation.

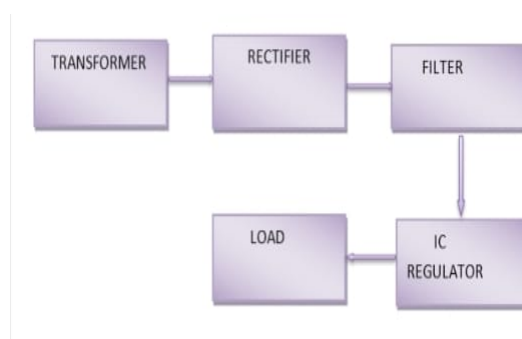


Fig 5 Block Diagram (Power Supply)

HEART BEAT CIRCUIT DESCRIPTION:

This circuit is designed to measure the heart rate. The heart rate is measured by IR transmitter and receiver.

Infrared transmitter is one type of LED which emits infrared rays generally called as IR Transmitter. Similarly IR Receiver is used to receive the IR rays transmitted by the IR transmitter. One important point is both IR transmitter and receiver should be placed straight line to each other. The IR transmitter and receiver are placed in the pulse rate sensor. When you want measure the pulse rate, the pulse rate sensor has to be

clipped in the finger. The IR receiver is connected to the Vcc through the resistor which acts as potential divider. The potential divider output is connected to amplifier section.

When supply is ON the IR transmitter passes the rays to the receiver. Depending on the blood flow, the IR rays are interrupted. Due to that IR receiver conduction is interrupted so variable pulse signals are generated in the potential divider point which is given to A1 amplifier through the capacitor C1. The coupling capacitor C1 is used to block the DC component because the capacitor reactance is depends on the frequency. For DC component the frequency is zero so the reactance is infinity now capacitor acts as open circuit for DC component.

VI. RESULTS

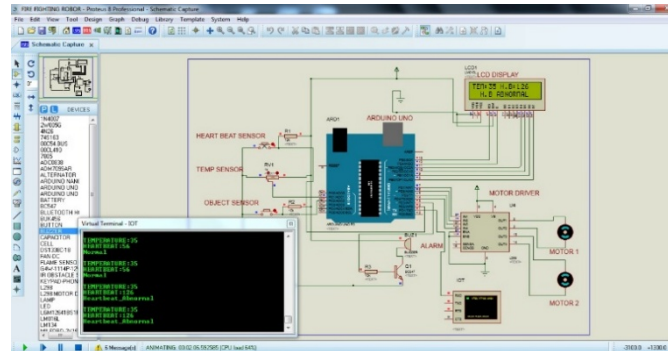


Fig.6: Temperature and Heart beat

VII. CONCLUSION AND FUTURE SCOPE

Health Iota therefore helps the sanatorium authorities to have nonstop monitoring on the cases as well as it reminds the case to have the drugs in time. So the croaker can have direct view over his cases by this. Therefore the drug procedures can be shifted from sanatorium centric to home centric. Before the drug box proposed with twinkle detector, temperature detectors and object grounded detectors. These detectors may have lower trust ability because of ambient light and indecorous estimation problems. So, the proposed relay is rugged in operation which is operated by means of DC motors. The DC motors are having controlled signal from Arduino microcontroller

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