

Patient Care Assistive System

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Abstract— The field of Information technology have a major part in amassing, interchange, and fining the information from problematic areas like war zones and country borders. This project will concentrate on regarding the creation of a health tracking system of a soldier which relay the information like pulse rate, temperature and Location. The parameters of which are monitored by using various bio-sensors were installed to soldier body. These sensors are going to connect with node MCU ESP8266-12E module for detect function. the data can be shipped off the console location through Lo Ra module using inbuilt protocols. The medical team will monitor the functioned parameters in Customer Cloud network through website page and furthermore these boundaries can be straightforwardly shipped off the versatile through SMS or Emails. In this project we are going to make a system which can be wear by soldier then it will track the status of their health and location of their presence in the timeline. Lo Ra module is used for the transceiver because of its low power consumption and for its communication.

I.INTRODUCTION

Internet of Things (IOT) is a corporation of device and sensors that interchange and finding record thru far off gateways. The proposed of IOT altered the studies in plan and development of embedded structures and this generation can improve the financial creation and protection of any country.

There are such a lot of tracking structures which include fitness tracking, health facility tracking and soldier tracking etc. This paper is ready for soldier tracking etc. This paper is ready soldier tracking gadget considering their fitness and protection is vital for our country. Perhaps the maximum tough trouble appeared through the Indian Armed Forces is the absence of suitable verbal exchange among the officer and the control room. For task module has been selected for lengthy variety verbal exchange among soldier and console room. Because in battle discipline the verbal exchange variety among soldier

and console is up to 4-five km so ESP8266 may be utilized in variety of one hundred ten km. By the usage of this soldier's fitness parameters In today's world and age rival battle is a urgent perspective in any country's security. The country wide security basically relies upon soldiery, maritime, flying corps and a dynamic job is played by fighters. Numbers of misgivings have been raised with regards to the prosperity of these champions. The defence development of country would be intense for their care. This framework will be helpful for troopers, who in corporate endeavours in extraordinary activities. Infiltratory, our regional armed force not just need to manage the actual danger, yet additionally with burden and weariness made by delayed cycles or even due absence of rest. Thus, for their security steadiness we really wanted an apparatus store mote trooper execution and wellbeing checking.

Furthermore, in this task a gadget is impelled through sensors for wellbeing nursing reason. Additionally, a GPS is been used popular to follow the area of the trooper. Additionally, a GSM is likewise used to mark the frame work remotely viable. This frame work licenses GPS following of these fighters. The data coming from sensors and GPS receiver will be transmitted wirelessly using ESP8266 module among the fellow soldiers. It tends to be clear cut a supportable figuring, correspondence advances, clinical sensors for wellbeing support. In this framework, brilliant sensors are connected to the assortment of officers for discovery and counteraction. This is applied with a specific server frame work for wide agility. This server will outfit the fondness to the server at the base station with the utilization of remote gathering. Individual fighter additionally has a GSM module that grants to interconnect with the base station if any injuries took note. As fast as some other officer cross the opponent

boundaries it is immensely intense for the soldiery base station to recognize the specific or anticipated area just as the ailment of the relative multitude of warriors. In our project we have come up with an idea of following warrior and this instrument is carried out through sensors for wellbeing checking reason just as to extend the condition status of the trooper all through the battle for their security. At the factor whilst mentioned protection, warriors expect massive and essential components in protecting their nations. During wars, many sacrifice their lives and we can in well-known lose those massive resources. The principle - purpose is negative or absence of community among warriors at the conflict fields and the army base stations. This leads a flawed and not on time wellbeing rein for cement places of work or Health Officials. There has been a ton of exploration as of overdue in coming across procedures to get warriors related to base stations whilst at the battle zones. Advancement and development of smart wearable devices proposed scientists to research improvements depending on Wi-Fi and Zigbee and RF Bluetooth innovation. Mountains a position device having Wi-Fi module burn-thru a great deal of force therefore, its battery is going on for few hours in particular. The constraint with gadget having ZigBee module is its brief reach (100m approx.). Along those lines, it isn't preferable in combat zones, as on the hour of battle, warriors want to unfold with inside the extensive place to display the enemies. In GSM primarily based totally verbal exchange gadget restricts its use in choppy and mountain place and proposed put on cap in a position device. In INDIA one of the popular cold Warfield is SIACHEN GLACIER. The Siachen is normal elevation is 18000 ft. above ocean level. Temperature is - 35 to - 25 degree Celsius and the THAADDESERT is the likewise one of the greatest temperature its 50 to 55 degrees Celsius by considering those two unique Warfield zones we are presenting this guard project, our venture we are fundamentally zeroing in on Soldier's wellbeing in conditions of his pulses and his internal heat level. As far as high temperature and furthermore most reduced temperature. On the off chance that warrior feels oblivious because of low temperature or high temperature or gets hurt becomes by release or in view of another clarification, then, his heart beats start growing or decreasing gradually. In this sort of

situation where the information about current heart beat rate transforms into the essential piece of fighter, this framework converges out as best to recognize the doctors at server site with the right and quick data. The GPS module tracks and will give the present area of the soldier which will be valuable for finding fighter's area and giving clinical treatment help as exactly on schedule as could really be expected.

The wearable embedded gadget will tune the fitness popularity in addition to the contemporary region with inside the actual timeline. Tracking might be completed through GPS sensor. ESP8266 as a transceiver will offer a steady and much less electricity intake wi-fi verbal exchange, for fitness tracking, we're the usage of biomedical sensors along with temperature sensor, coronary heart beats sensor and Location. However, wearable device proposed on this correspondence makes use of ESP8266 innovation. This module calls for usually less ability of electricity and might ship the records over longer distance. This is completed through going records thru MQTT protocol to neighbourhood ESP8266 devices which at remaining exchanges it to the manipulate unit.

II. LITERATURE SURVEY

Pendurthi, Hari Kiran, so this exam paintings has fostered a framework using Internet of Things to assist human beings and help them with in search of spark off treatment. The proposed framework makes use of a heartbeat sensor, which whilst a finger is about on it computes the pulse of the individual. In this framework there are sections the gadget that's applied to compute coronary heart-beat and the alternative is to continuously display coronary heart beat records that's accumulated with inside the beyond advance. Santhanamari, facilities round making plans a well-being gazing framework which sends the records, for example, nicely being limitations of officer over a Versatile Specially appointed Organization (MANET) with a gifted guidance conference through RF 24L01 to the manipulate room.

Samal, facilities round depict the association of WBS with a view to be established the soldiers coat and the records from the WBS are been despatched to the automatic airborne vehicle (UAV) and for the

rationalization of stable correspondence the records are in like way been sent to the army truck.

Vardhinitalkd approximately at the Evolution of IOT offers one-of-a-kind solutions for the massive problems appeared through wellbeing frameworks. Advancement of savvy houses and sensible city regions with e-remedy well-being administrations fortified the concept of victim pushed on IoT primarily based totally nicely being habitat. Memory weakness resource as a mines a in scientific methodology s the cognitive decline or abnormal absent mindedness. Jain, proposes the well-being checking module is a resounding protection and execs purity mode lineal proposes. This framework kisim packed through more than one factors like illnesses and GPS are a off fighter who put on this handy in served framework.

Jethwa, proposed the implementation eager warrior well-being checking gadget, that could in all likelihood similarly increase the tactical responsibilities generously. It assists with buying the records from the catastrophe area.

Hasan, proposed version is the execution of the proposed ECG scientific offerings framework empowers the expert to display the affected person's remotely using IoT THING VIEW utility delivered on his molecular telecell smartphone for coping with and imagining the affected person's ECG sign. The checking gadget must be feasible whilst ever and wherever without the requirement for the medical clinic. Kalaiselvi, the proposed paper objectized approximately the subsequent and checking of an officer using GSM module and communicate with to the correspondence room.

Tamilselvi, this proposed approach contains of diverse remarkable sensors like Temperature, Heartbeat, Eye squint and SPO2 (Peripheral Capillary Oxygen Saturation) sensors forgetting the affected person's inner warmth level, coronary pulse, eye improvement and oxygen immersion level of the affected person. This framework use ARDUINO-MEGA board as a microcontroller and Cloud processing concept. Here the accelerometer sensor used to expose the frame improvement of the trance state victims.

Hot proposed the plan and execution of a minimum cost inserted gadget created for remarkable fighter assist, the frameworks fuse a sign acknowledgment based visual flagging, a Ultra-Wide Band (UWB)

determined internal and shorter variety out of doors dilemma and organic boundary checking fundamental components.

Zourmand proposed the real corporation of IoT framework using ESP8266 innovation withinside the corporation of mixture of Wi-Fi innovation. Also, this painting represents the exhibition and additionally the real inclusion area of ESP8266 community in each the internal and open-air situation.

Priyanka. In this Proposed compact physiological checking gadget is shown, that could usually display the affected person's pulse, temperature and different essential limitations of the room. Kazi, Sufiya The pulse of the patient can be observed by the specialist or by the watchman without really visiting the patient. Thinking about this, we have fostered a model for an arm band that is convenient, wearable far off pulse checking gadget. Krishnan, D. Shiva Rama, this is for uniquely checking the advanced age patients and illuminating specialists and friends and family. So, we are proposing a creative undertaking to evade such unexpected demise rates by utilizing Patient Health Monitoring that utilizes sensor innovation and utilizations web to impart to the friends and family if there should be an occurrence of issues. Durani, Homera, this paper is clarifying that monitoring of circuit devices through wireless using Node MCU and controlling using THING VIEW.

III. BLOCK DIAGRAM

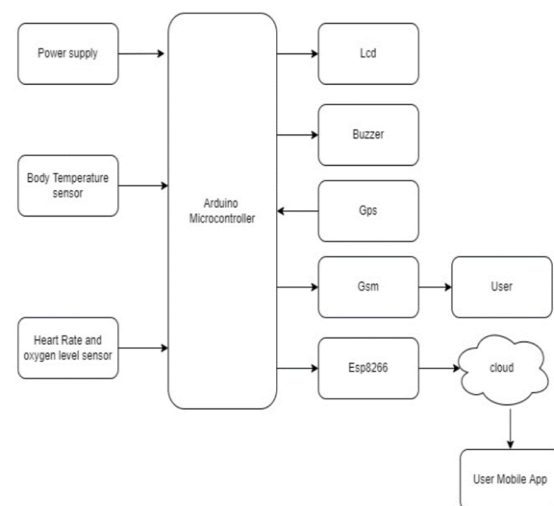


Fig.1. Block Diagram

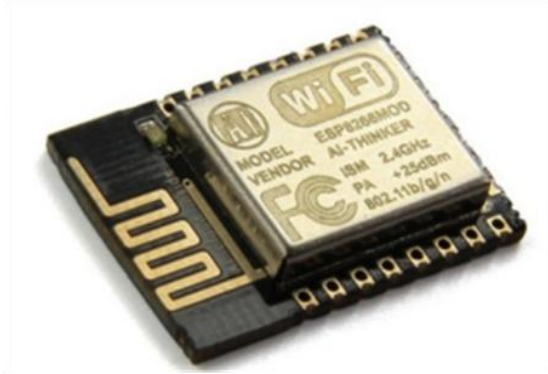
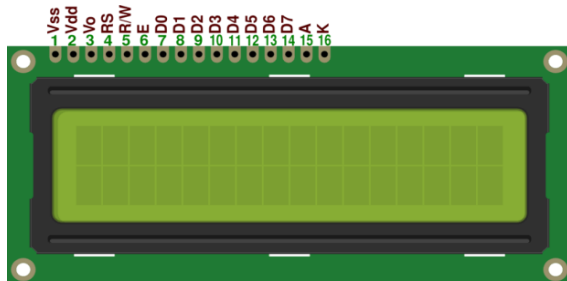


Fig.2. ESP8266

The above figure is the figure 6.1 is the ESP-12E module is the major module which is incredibly complete of the ESP family as it permits to utilize the greatest measure of pins of every one of them. This module can be modified to work remain solitary with the Arduino IDE or with LUA as NodeMCU. The module had a remote Wi-Fi handset working in an unlicensed recurrence scope of 2400-2484 MHz in the IEEE 802.11 b/g/n standard, with help for TCP/IP correspondence convention stack and Wi-Fi security including WAP3. In this project this module is used as Wi-Fi module for transmitting and receiving data.

6.2 LCD 16 *2

Nowadays, we tend to invariably use the devices that area unit created of LCDs like CD players, optical disc players, digital watches, computers, etc. These areas unit unremarkable utilized in the screen industries to interchange the employment of CRTs. Beam Tubes use vast power compared with LCDs, and CRTs heavier likewise as larger. These devices' area unit dilutant likewise power consumption is extraordinarily less. The liquid crystal display 16×2 regulation is, it blocks the sunshine instead of dissipating. This text discusses an outline of liquid crystal display 16X2, pin configuration and it's operating.



6.3 ARDUINO MEGA

The Arduino Mega is also could be a microcontroller board supported the ATmega2560. It's fifty-four digital input/output pins (of that fourteen can be often used as PWM outputs), sixteen analog inputs, four UARTs (hardware serial ports), a sixteen-rate crystal oscillator, a USB affiliation, a influence jack, Associate in nursing ICSP header, and a push. It contains everything needed to support the microcontroller; just connect it to a laptop with a USB cable or power it with accociate in nursing AC-to-DC adapter or battery to induce started.



6.4 PULSE RATE

The figure 6.3 is the Pulse sensor Utilizations two unmistakable methodologies to record the signals of heart like (electrical and optical). The two kinds of signs can give similar fundamental beat data, using totally computerized computation to measure heart rate. The electrical screens comprise of pair components, a screen/transmitter which can be wear by a person on his chest. Later gadgets use optics to gauge pulse by focusing light from an LED through the skin and quantifying can be disperses all through the veins. Operating voltage 1.8v to 5.5v.



Figure6.3: Pulse rate sensor

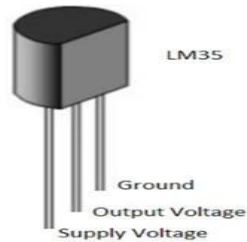
6.5 TEMPERATURE SENSOR

These are utilized to quantify temperature can get values through electrical signals and is comprised of

two metals, which create electrical voltage or resistance once it sees an adjustment of temperature. Here is the figure 6.4 is the picture of LM35 sensor utilizes the fundamental standard of a diode, where as the temperature expands, the voltage across a diode increment at known rate.

The operating Voltage is said to be - 2v and 35V respectively (typically 5v) and can gauge temperature going from -55°C to 150°C. It is a minimal expense temperature sensor and it doesn't need signal molding, adjustment is additionally finished by programming.

Henceforth LM35 might be use. The Temperature can be distinguished with the assistance of a temperature sensor LM35. The LM series are accuracy incorporated circuit temperature sensors, whose yield voltage is straightly corresponding to the Celsius (Centigrade) temperature.



6.6GPS

The term GPS full form is "Global Positioning System" which is called as a satellite navigation system that outfits area and time data in all environment conditions to the client. Here the figure 6.5 is the pictorial representation of GPS. The framework gives basic capacities to military and regular citizen clients all throughout the planet. The working or activity of the GPS depends on the 'trilateration' numerical guideline. The location is decided from the distance estimations to satellites. Neon 6mGPS operating voltage 2.7v to 3.6v and range is 3m (position accuracy).

6.7Description of MAX30100

MAX30100 could be a useful detector used for multiple applications. It's a rate watching detector together with a pulse measuring instrument. The detector contains 2 light-weight emitting diode, a photodetector, and a series of low noise signal process devices to notice rate and to perform pulse oximetry.



Figure 6.7: Heart rate oxygen

IMPLEMENTATION

Open the Arduino IDE software program and write the code in it. Install the libraries and forums required from the board manager and library manager. Select the board as the "NodeMCU(12E)" and take a look at the code. If it has completed efficiently and not using a errors, then dump the code with inside the Node MCU module via statistics cable. After getting Done Uploading with inside the compiling window, then join the module to power supply. Connect the WIFI to the Node MCU module and join the identical WIFI to the mobile phone consisting factor view app. Open the factor view app and create a brand-new project. Select the board as Node MCU and connection kind is WIFI. Generate an authentication token from the factor view app in order to be sent through the email. Open the factor view app and add the GPS, upload temperature and pulse to screen readings of soldier frame temperature pulse and notification control forgetting notifications from Node MCU. Same as thing view app create account in the Thingspeak platform. Project in the thing speak platform. Add the parameters as mentioned in our circuit like temperature, pulse and GPS. It will show there adding THING VIEW app. THING VIEW also shows the Graphical representation of the temperature and pulse. THING VIEW also provides the all there adding from the overall readings in a sheet.

RESULT:





ADVANTAGES

1. The band cover blood pressure, body temperature, heartbeat and more advancements which is leading a major growth in healthcare.
2. Promote independence and autonomy.
3. Improved quality of life.
4. Better location accuracy than WIFI alone.
5. Promote independence and autonomy both for the person and those around them.

APPLICATIONS

1. Remote patient monitoring.
2. Heart rate monitoring.
3. Temperature monitoring.
4. Oxygen level monitoring.
5. Health readiness behavioural management tool.

CONCLUSION

From the above planned work can be inferred that we can communicate the information, which is detected from remote fighter to the server PC by utilizing remote transmission innovation. It is totally incorporated so it is feasible to follow whenever from anyplace. It has continuous capacity. The above of framework is impacted by certain variables such as climate, climate around the fighter unit, GPS recipient. The future works incorporate upgrading the equipment framework, picking a reasonable GPS recipient further developing the directing calculation can be improved by neural organization. This framework enjoys many benefits like huge Capability, wide region strange, low activity costs, effective, solid expand ability and simple to utilize Redesigning this arrangement is exceptionally simple which makes it open to future necessity.

FUTURE SCOPE

1. The future scope of this project is to implement more applications to the assistive system.
2. In this project we are only working with three applications. so, we have to work on different health conditions of the soldier.
3. To implement more applications we have to work on it.

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