

Personal Health Assistant

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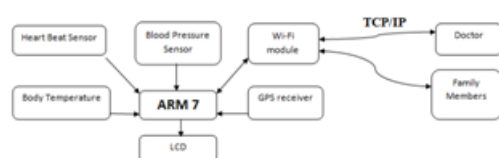
Abstract: In this project we are going to measure Blood Pressure, Heart Beat and Temperature. Parameters such as Patient's Name, BP systolic diastolic, Heart Beat rate, Body Temperature, Latitude and Longitude are being transmitted to the doctor via TCP connection at the receiver end.

1. Introduction

In Previous days, we used conventional techniques for monitoring health. We were using doctor's appointment and then went to the hospital. Instead of this, we developed a way of messaging. Another way of communication we used was Zigbee (RF signal), Bluetooth, etc. But there are drawbacks in these conventional methods viz., Limited range of communication, Not reliable due to discontinuity of networks, Time consuming & slower one. But these drawbacks are overcome by using Internet of Things (IOT). IOT is faster than all conventional methods. It is also reliable & can access in unlimited range. The technology used in this project is Internet of Things (IOT). IOT is the network of physical devices, vehicles, buildings and other items embedded with electronics, software sensors, actuators, network connectivity that enables these objects to collect and exchange data..The IOT allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit; when IOT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems, which also encompasses technologies such as smart grids, smart homes, intelligent transportation and smart cities.

2. System Design

A. Block Diagram



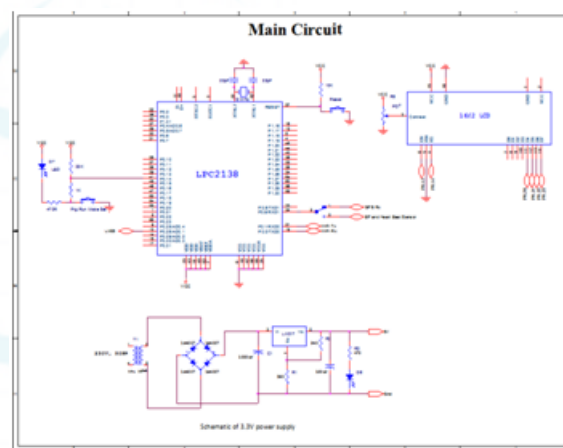
The key components in this block diagram are ARM 7 microcontroller, Heart Beat/BP sensor, Body Temperature sensor, GPS Receiver, Wi-Fi Module and LCD.

The micro-controller used in this project is LPC 2138 micro-controller which is based on a 32-bit ARM7 TDMI-S CPU with real-time emulation and embedded trace support. It has 32kB, 64kB, 128kB, 256kB and 512kB of embedded high speed flash memory.

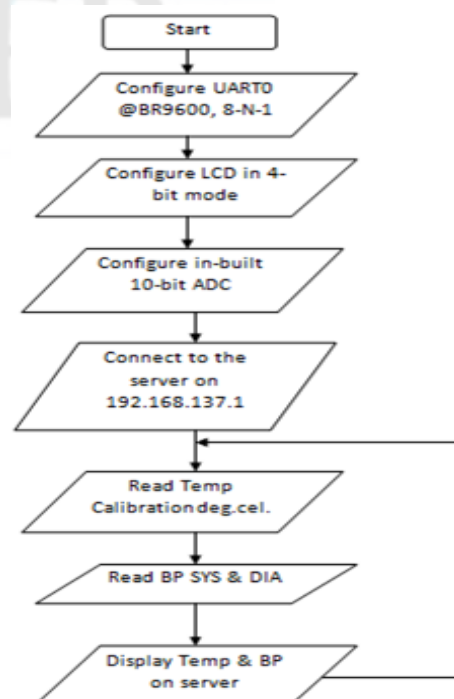
The BP and Heart rate sensor used is the 3765 model. In this model BP and Pulse rate would be shown on the display. It shows Systolic, Diastolic and Pulse readings. It has a design similar to a wrist watch. It is compact and easy to use.

The temperature sensor we will use is LM 35 sensor due to its accuracy. It shows a 10mV/degree C. It is internally calibrated. It does not need an amplifier and can be directly interfaced to the micro-controller. The Wi-Fi module we will use is ESP 8266 serial Wi-Fi module. It has serial UART interface and built-in TCP/IP. The LCD will be used at the user's terminal to display the systems operational state. The LCD we will use is JHD162A series LCD.

B. Circuit Diagram



C. Flow Chart

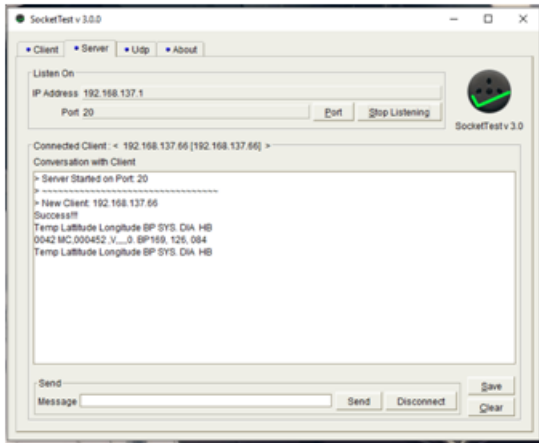


3. Result

A. Expected Outcome/Benefits

- Can monitor the user's health anytime anywhere.
- The values detected at the user's terminal will be exactly transmitted to the receiver terminal.
- Exact condition of the user can be easily determined without going to the hospital.
- Alerts family members and doctors regarding the user's location in case of an emergency

B. Screenshot of the Result



C. Advantages

- The data will be sent to the Doctor using IOT.
- Using IOT a large number of devices can be inter-connected.
- Users can check their health whenever they want.
- Fast transmission of data.
- Wi-Fi module can be easily replaced with GPRS for mobility purpose.

D. Disadvantages

- Internet connection is required for the transmission of data.
- It takes some time for the connection to be established and for transmission of data.

4. Conclusion

In this project, we proposed a new method using which a user can check his health without the bounds of time and place. In case of an emergency, the Personal Health Assistant would assist the user and can prevent loss of life.

References

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