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AUTOMATIC WIRELESS HEALTH MONITORING SYSTEM IN HOSPITAL FOR PATIENTS

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ABSTRACT

Hence the system is highly efficient and low-cost. Mobile phones have become a widespread means of communication. It becomes a part of everyday life with ever more people enjoying the service and extra freedom they provide. It works on the basis of Global System for Mobile Communication (GSM). Because Simple person - to - person messaging is such an important component of total SMS traffic volumes, anything that simplifies message generation as well as extended utility of the SMS being sent is an important enabler of Short Message Service. ***The purpose of this project is to measure the heartbeat of that particular person if high or low heart will come automatically it will sends a message through GSM. By using heart sensor we can calculate the heart beat rate.it contains the high power LED and LDR to calculate the heart beat and sends message through GSM.***

Key Words- AT89C51 Micro Controller, GSM, Heart Beat Sensor, Temperature Sensor.

I. INTRODUCTION

Normally heartbeat count for a patient itself manually tuff to keep track on irregularity. The average heartbeat of different age group people is different and body temperature is 37degree Celsius or 98.6 Fahrenheit. Doctors normally use for tracking count of heartbeat is not well versed with manual treatment. So there must be some device which would help patient to keep track on their health by themselves. There are various instruments available in market to keep track on internal body changes. But number of problems are occurred regarding to their maintains of the patience. This device that is a heartbeat sensor would help them to keep track on heartbeat counts of a patient and check for any abnormalities. If any varied change takes place it is notified through the GSM, this notification would help to take an appropriate action at instant time. this would help for patients from the future health problems.

II. HARDWARE DESIGN

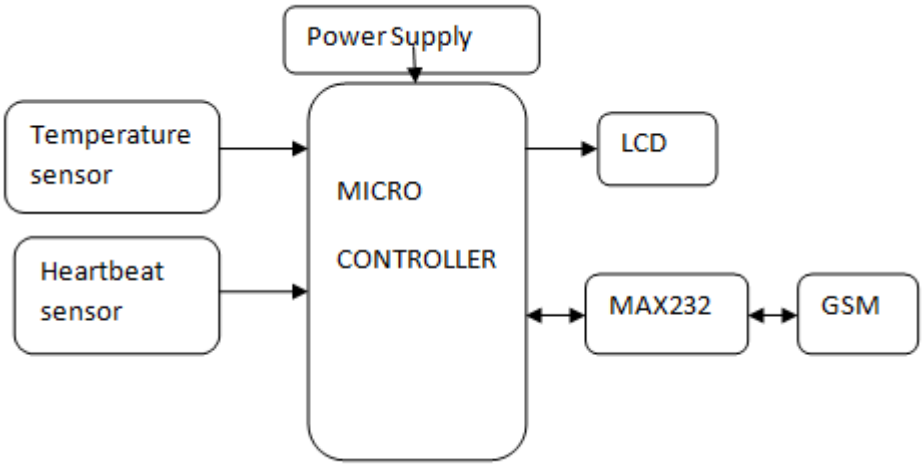


Fig: BLOCK DIAGRAM OF THE PROJECT

2.1 8051 Microcontroller

8051 micro controller consists of 40 pins, in those pins 32 pins are I/O pins and remaining 8 pins are special function pins. In 8051 RESET pin is used for reset or refresh the program and crystal oscillator is used for generating the pulses using 11.0592 MHz frequency. If we want to connect sensor or any other module we must connect port pins in micro controller.

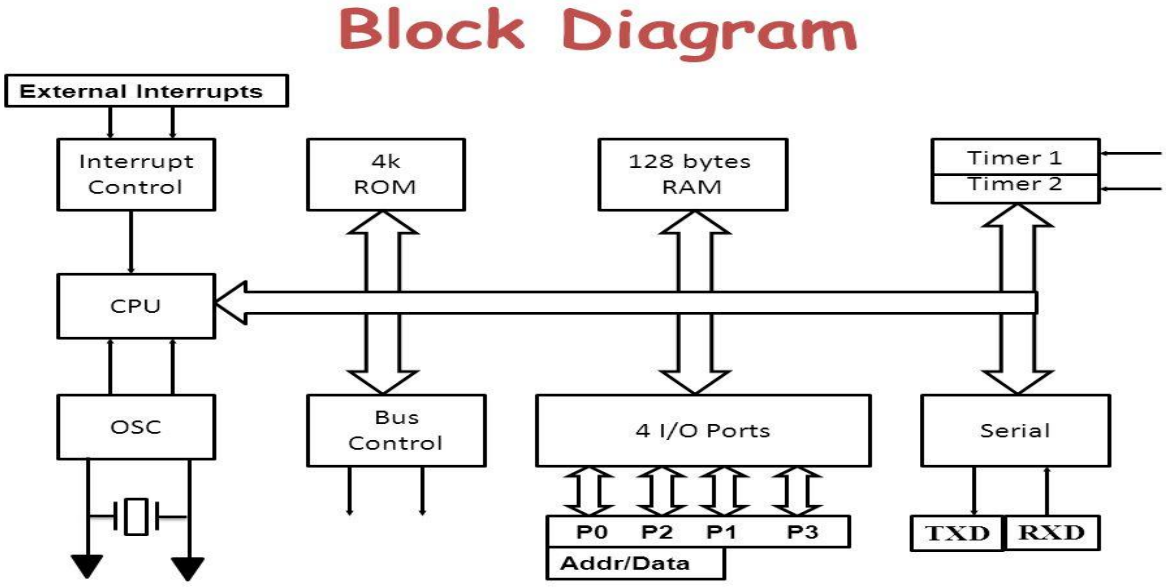


Fig: 8051 block diagram

2.2 Liquid Crystal Display

LCD (liquid crystal display)it is a 16x2 lcd. that means it will contains 16 characters for every line and there are two lines .every character is in the form of the 5*7 grid. This LCD has 2 registers, to be specific, Command and data register .the lcd contains 8 data lines through that 8 data lines only we can send the commands and data .lcd

contains some commands for clearing, shifting, starting line in the lcd .for the sending the data or commands we have one register that is RS.if RS=1 we can send the data if RS=0 we can send the command .

2.3 GSM Modem

A GSM modem is a specialized one kind of modulator-demodulator in which a SIM card is accepted and we can be operated over a subscription to the mobile operator. GSM module is used for the data to a GSM required system. In many countries it is used as architecture for mobile communication. GSM module consists of a GSM modem and we have the like RS-232, USB along with a power supply circuit for computer. GSM modem communicates over the mobile network when connected to a computer. GSM modems are also used to send and receive SMS and MMS messages. A GSM can be easily interfaced with the microcontroller system and uses serial communication for data transfer.

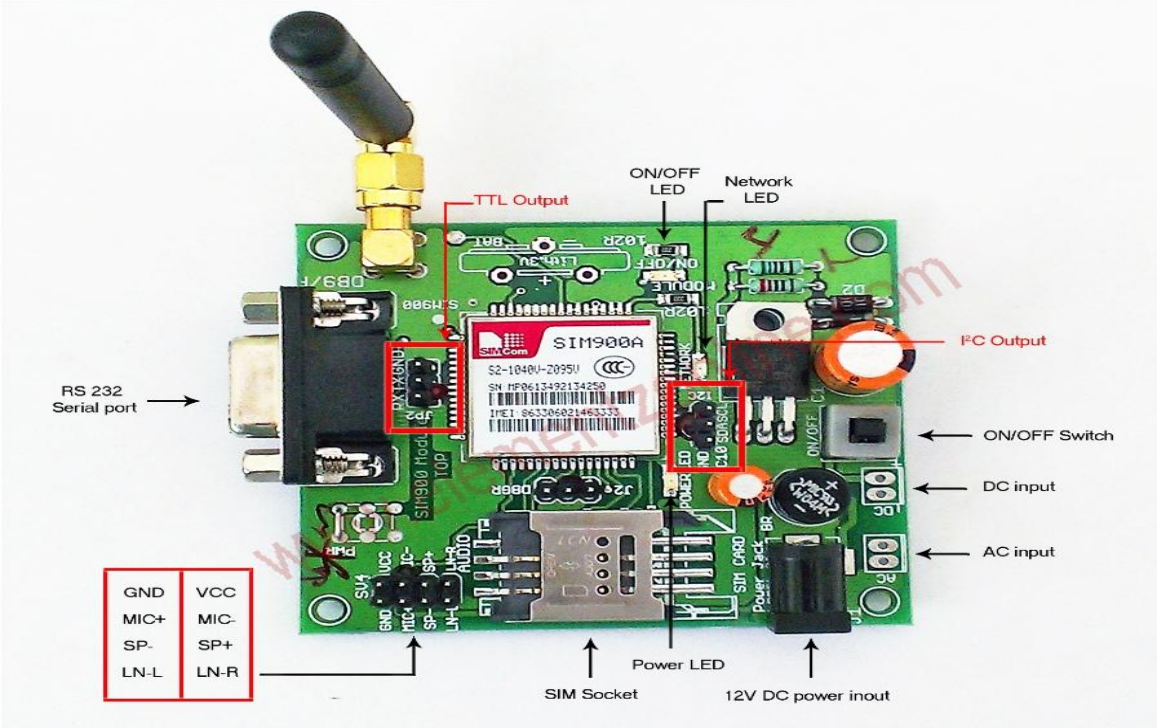


Fig: GSM modem

2.4 MAX232

Max232 is a voltage level convertor, which can convert the voltage levels of TTL to RS232 and vice versa. MAX232 is used in RS232 communication systems, converting the voltage levels are required to make TTL devices to be compatible with PC serial port and vice versa.Max232 is one of the versatile IC to use in most of the signal voltage level conversion problems. Premierly MAX232 is used in Serial communication. Problem arises when we have to communicate between TTL logic and CMOS logic based systems. RS232 is internationally defined standard named as EIA/TIA-232-E and in this standard logic 0 is the voltage between +3 to +15 and logic 1 is defined as the voltage between -3 to -15.In TTL logic 0 is defined is by 0 volt and 1 is defined by 5 volt so in this scenario this is a very handy IC to be incorporated.

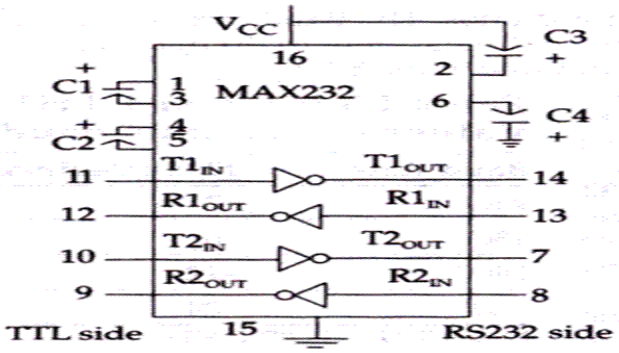


Fig: Max232

2.5 Heart Beat Sensor

Heart beat sensor is used for measuring the heartbeat of the human. Heart beat sensor mainly consists of Light emitting diode and light dependent resistor or a photo diode. The heart beat pulses causes a vibration in the flow of blood to different regions of the body.The light is absorbed by the rate of flow of blood we can calculate the rate heartbeat.

2.6 Temperature Sensor

In this project we are using the DS1621 temperature sensor. It gives the digital outputs,which indicates the temperature on the device. The DS1621 is a simple two wire interface circuit.here we can set one noramal temperature if above normal we will get TH(high temperature) value will activates ,if it will get lower than normal temperature TL(low temperature).

III. SOFTWARE DESIGN

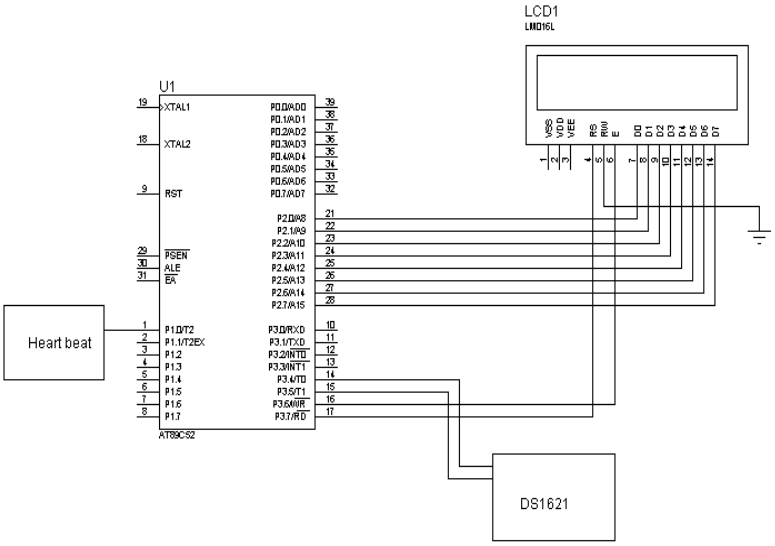
To finish the undertaking on equipment need to installed programming on to the controller utilized as a part of this venture for that reason we need programming's similar to Keil u vision and glimmer enchantment those are examined in given beneath

Compiler that keeps running on one pc however delivers PC code for an unmistakable sort of pc. Cross compilers square measure usual produce PC code which will keep running on PCs with a substitution plan or on exceptional reason gadgets that can't have their own compilers. Cross compilers square measure extremely in

vogue for implanted improvement, wherever the objective more likely than not couldn't run a compiler. Normally relate degree inserted stage has limited RAM, no plate, and confined I/O ability. Code are frequently adjusted and accumulated on a brisk host machine, (for example, a tablet or working framework workstation) and in this way the resulting feasible code will then be downloaded to the objective to be tried. Cross compilers square measure helpful at whatever point the host machine has a ton of assets (memory, circle, I/O and so on) than the objective. Keil compiler is one such compiler that backings a gigantic assortment of host and target blends. It underpins as an objective to eight piece microcontrollers like Atmel and Motorola and so forth. Streak Magic is partner application created by Embedded Systems Academy to allow you to just get to the choices of a microcontroller gadget. With this project you'll have the capacity to delete individual squares or the entire nonvolatile stockpiling of the microcontroller.

IV. WORKING DESCRIPTION

Here we are using AT89C51(8051) micro-controller. The LCD was connected to the PORT-2. In this using 8-bit LCD. So we used 8-data lines. The register select is connected to the P3.7 and enable is connected to P3.6. So whatever the data we want we can display it on LCD. The heart beat sensor and temperature is used for to check the patient health and that is connected to the relative port pins and GSM is connected to the UART1 for sending the sending message if any abnormal condition will occurred.the heart beat is connected to P0.1 and temperature is connected to P3.4 and P3.5.



V. RESULTS

Here the results are shown our project "AUTOMATIC WIRELESS HEALTH MONITORING SYSTEM IN HOSPITAL FOR PATIENTS" in this project the health condition of a patient is send to the respective person through message by using GSM.When any person can power on the circuit, all the LEDs on PCBs are glowing, indicating that circuit is working properly. Here there is a use of the industrial temperature sensor i.e.DS1621 which gives us room temperature in 0C. That temperature is displayed on the LCD.If the patient health is not good it will sends message through GSM. the heart is measured by the analog voltage next processed with operational amplifier. Result is displayed on the LCD. This collected data is transmitted using GSM module. This data is received at the receiver section using same GSM module.

VI. CONCLUSION

Here we have analyzed the health of the patient wireless by using heart beat and temperature sensor. If patient will not good it will sends a message through GSMAny abnormalities in health conditions are informed via SMS to the indicated mobile number through GSM. The hardware is implemented and the output is studied.

VII. AUTHOR DETAILS

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