

Portable Health Monitoring and Medicine Reminder for Old Age People

Sameer Batra¹, Sunny Batra²

¹Vivekanand Education Society Institute of Technology Mumbai, Maharashtra India

²Thadomal Shahni Institute of Technology Mumbai Maharashtra India

Abstract: In this busy and competition world we cannot monitoring our elders (aged people) and patients continuously even though we have so much of love on them .By using advancements in present technologies we are developing this project to save time and user friendly system .The user has to press the respective button to get his service, and then the predefined message will be played through speaker. In general, most of the patients forget to take the appropriate medical course at appropriate times. There may be chances that they remember to take the pills at regular times but forget the pill which has to be taken at that particular time. This is a big problem and it is also difficult to doctors to monitor patients always. And also, mostly in the hospitals, it is not an easy and available service to employ a nurse to a single patient exclusively. To avoid these problems, we have implemented this project which can remind the patient about the intake of medicines at regular time intervals and also sends the information to the doctor about the patient if the temperature or the heartbeat exceeds the normal set point. This project is designed mainly for patients and old aged people

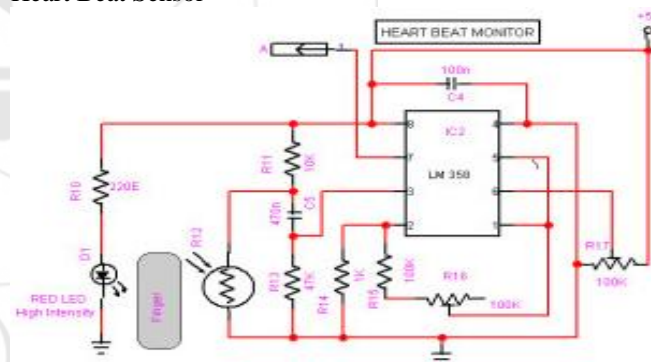
Keywords: Health monitoring, Medicine Remainder, Voice Guider , Embedded Project

1. Introduction

Patients forget to take the appropriate medical course at appropriate times. There may be chances that they remember to take the pills at regular times but forget the pill which has to be taken at that particular time. This is a big problem and it is also difficult to doctors to monitor patients always. Mostly in the hospitals, it is not an easy and available service to employ a nurse to a single patient exclusively. We have implemented this project which can remind the patient about the intake of medicines at regular time intervals and also sends the information to the doctor about the patient if the temperature or the heartbeat exceeds the normal set point.

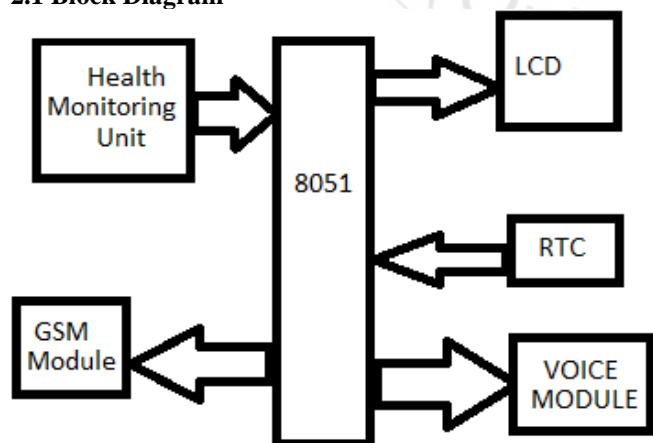
Kelvin, as the user is not required to subtract a large constant voltage from its output to obtain convenient Centigrade scaling. The LM35 does not require any external calibration or trimming to provide typical accuracies of $\pm 1/4^{\circ}\text{C}$ at room temperature and $\pm 3/4^{\circ}\text{C}$ over a full -55 to $+150^{\circ}\text{C}$ temperature range.

Heart Beat Sensor -



2. System Architecture

2.1 Block Diagram



2.2 Health Monitoring Unit

Temperature Sensor LM35 - The LM35 datasheet specifies that this ICs are precision integrated-circuit temperature sensors, whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The LM35 thus has an advantage over linear temperature sensors calibrated in

2.3 Lcd

It is used to displaying the result on a text based LCD.

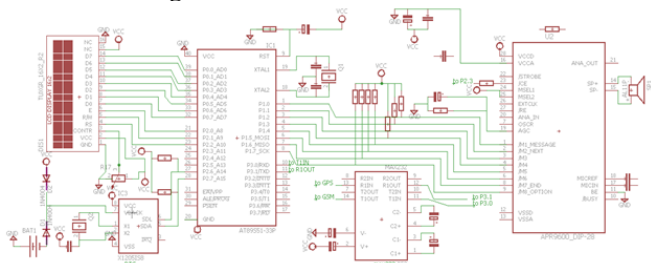
2.4 Voice Module APR33A3

The aPR33A series are powerful audio processor along with high performance audio analog-to-digital converters (ADCs) and digital-to-analog converters (DACs). The aPR33A series are a fully integrated solution offering high performance and unparalleled integration with analog input, digital processing and analog output functionality. The aPR33A series incorporates all the functionality required to perform demanding audio/voice applications. High quality audio/voice systems with lower bill-of material costs can be implemented with the aPR33A series because of its integrated analog data converters and full suite of quality-enhancing features such as sample-rate convertor.

2.5 Microcontroller

Microcontroller AT89S52 is being used in our project for controlling health monitoring module as well as voice guider module. A programme is been installed in the microcontroller using keil software and the predefined threshold value is been set. When the heat rate or temperature exceeds that value, microcontroller will activate the voice guider module.

2.6 Circuit Diagram



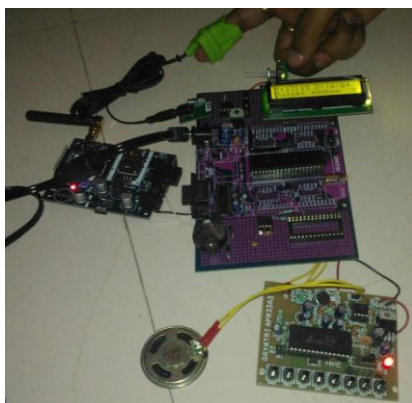
2.7 Working

When the ac mains is switched on, a 12 volts supply is given to the transformer. This voltage is then stepped down to 5 volts and sent to the power supply board. Here the ac volt is converted to dc using a series of resistors and a rectifier network. The capacitive network then filters the dc voltage. The regulated output is sent finally to the micro controller board. In the micro controller board the microcontroller IC AT89LP51RD2 is pre embedded with a software program using a keil compiler. The input of the micro controller is given from the oscillating crystal 11.0592 via the pins X1, X2(18,19). The entire system is further interfaced to a pc using a MAX 232 port to connect the RS232 cable.

2.8 Applications

- The system is very useful in hospitals as well as in house as it can be installed anywhere very easily.
- It can be used in the hospitals to remind patients about their medications
- To monitor health of the elderly people.
- It can also be used in homes as use of GSM makes it useful in emergency situation. hospitals are very few or very far from the locality.

3. Results



4. Conclusion

Hence an attempt is made to design a device which not only acts as an alarm system but also can measure the parameters of the body and the attempt is successful. We conclude that this device can be used for better medical monitoring and medication. The voice module gives perfect reminder for the medicines so that we will not forget at any time to take our medicines. And the addition of heart rate sensor and temperature sensor provides better health monitoring for elderly people

References

- [1] Handbook of Bio-Medical Instrumentation
- [2] R.S.Khandpur Bio-Medical Instrumentation and measurement Leslie Cromwell
- [3] Linear Integrated Circuits Roy Chowdary

Author Profile



Sameer Batra has received the Bachelor of Engineering degree from Vivekananda Education Society Institute of Technology Mumbai in Electronics Branch. He has also completed Certification Course in Embedded Programming From CDAC ACTS (Center of Development in Advance Computing) Pune .



Sunny Batra has received the Bachelor of Engineering degree from Thadomal Shahni Institute of Technology Mumbai in Biomedical branch. He is working with Kudos IT pvt ltd as a Biomedical Engineer.