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PC based Monitoring of Human Temperature Signal using LabVIEW

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Abstract: Monitoring means measurement of the physiological parameter continuously. In this paper we are using LabVIEW. LabVIEW is the graphical programming language. The temperature parameter is measured and monitored in graphical user interface, where the data bases are maintained. Here the parameter of temperature will be obtained in the form of voltage. Then the obtained voltage is converted into temperature in Celsius and fareheint form by using tool which is available in LabVIEW.[Laboratory Virtual Instrument Engineering Workbench]

Keyword: LabVIEW, MYRIO, Wi-Fi, temperature sensor, temperature.

INTRODUCTION

Those days the human body temperature is monitored only by touching and also by keeping the thermometer under the tongue and arm etc,. The status condition of human being whether the patient is died or not is determined only with the help of the temperature. When the temperature is normal then the human is in normal condition if the temperature is either high or low then it seems that the patient will be determined that the patient is dead. This because the temperature will be determined only from the circulation of blood in our body. Inorder to obtain the temperature in our body in numerical way and in a technical form this PC based monitoring of human temperature signal using LabVIEW is being done. This paper explains about the monitoring of human temperature and to maintain the database using LabVIEW myRIO

OVERVIEW OF LabVIEW

- ACQUISTION OF SIGNAL

Designing of LABVIEW is used with hardware supported by National Instrument MYRIO driver. USB communication cable, PCI device with analog input also include in that. NI MYRIO device is device created using MYRIO option in the menu of function block of labview for operating the program without use hardware.

- PROCESSING AND ANALYSING OF SIGNAL

There is a lot of built in analysis function available in LabVIEW, which is used to easily create the program for complementary problem. Filter, PID control algorithm, converter and correction factor, simulated signals these are commonly used library.

- DISTRIBUTED APPLICATION

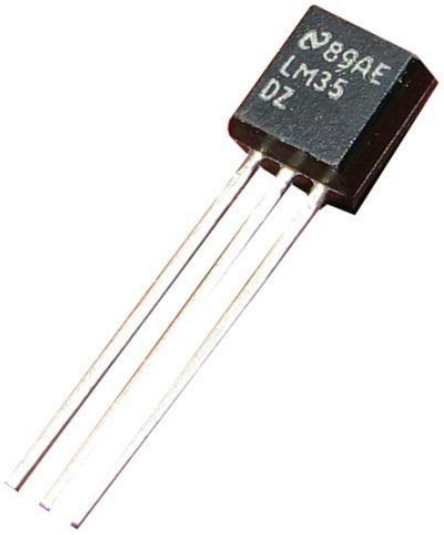
LabVIEW has some important features to develop the distributed application using internet toolkit, VI, MYRIO-Wi-Fi.

SYSTEM REPRESENTATION

There are three parts involved in the system design. Sensor, signal processing and user interface. The sensor part involved to select the suitable sensor. For temperature measurement LM35 sensor was selected.The second part involved the processing signal which is obtained from the corresponding sensor. The third part involved the developing the user interface. Here the temperature signal is acquired. That signal is then available in MYRIO which has both the input/output channel which is interface with LabVIEW for analyses the signal.

- MEASUREMENT OF PARAMETER TEMPERATURE MEASUREMENT

Here the LM35 sensor is used for



measuring the temperature of the patient's body. It is a precision centigrade temperature sensor. LM35device does not require any external calibration or trimming to provide typical accuracy.

That sensor has some important features, that it is directly calibrated in Celsius. Its accuracy is 0.5 degree Celsius. It is most suitable for remote application. Operating range for it is 4v to30v.andit can drain the current from the source is less than 60 micro amp.

It is rated for full -55 to 150 degree Celsius range. That device is used with single power supply. That sensor has some important application. These are power supplies and battery management.

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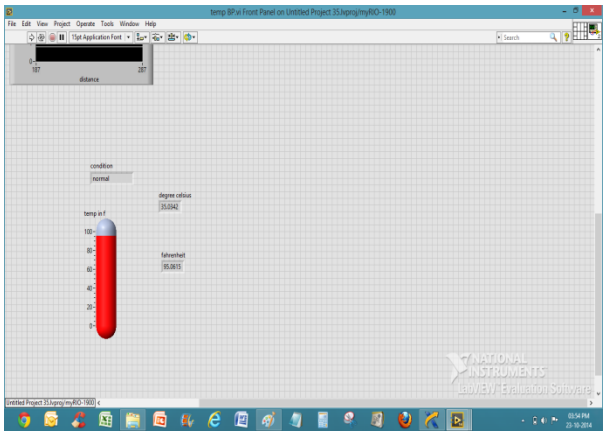
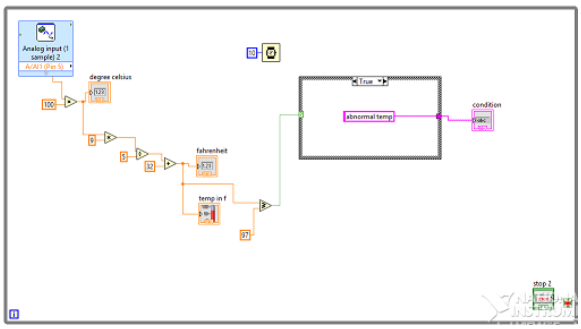
FRONTPANEL



In that block diagram we can get the output temperature by giving voltage as input signal.

BLOCK DIAGRAM



And then that temperature signal will be converted into Fahrenheit form by using some comparison block which is available in function block. And then that signal range will be compared with normal parameter range. Depending upon the comparison result the status of the patient's condition will be displayed in string format.

CONCLUSION

In the field of biomedical, the real-time monitor system can be performed with high accuracy by using LABVIEW.LABVIEW extremely support the instrumentation hardware accessing when compared to other platform. LABVIEW is graphical Programming language so the other person can easily modify the program as their convenient. Statement about patient health condition can be send to the doctor by using Wi-Fi specialty which is available in NATIONAL INSTRUMENT MYRIO.

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