For more Project details visit:

http://www.projectsof8051.com/android-based-alcohol-detection-system-using-bluetooth-technology/

Code	Project Title
1435	Android based Alcohol detection system using Bluetooth technology

Synopsis for

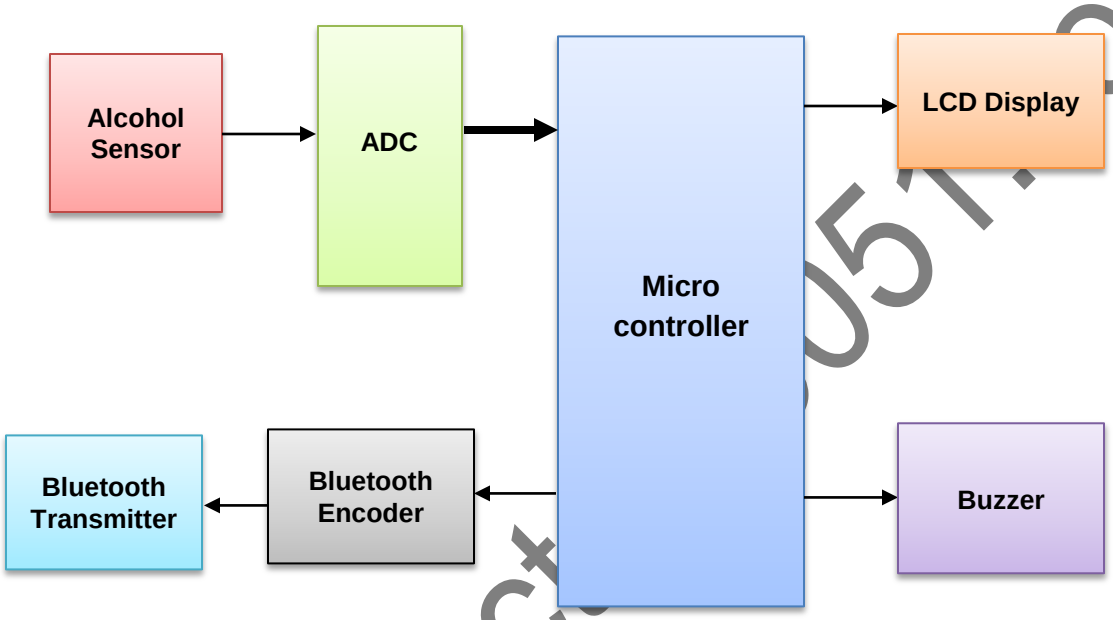
Android based Alcohol detection system using Bluetooth technology

Introduction

This project is used as an "Alcohol detector". Alert is sent on an Application installed on Android mobile. This project can be used in Colleges, University campus, Industries and companies. The main objective of the project is to detect whether the person has consumed the alcohol or not. Alcohol sensor is used to detect the alcohol. Microcontroller sends alert to Android mobile using Bluetooth transmitter.

Person has to breathe out in front of Alcohol sensor. Generally this project should be installed on the entrance gate of college or company. If the alcohol percentage is more than the threshold value then microcontroller turns on the Buzzer immediately. Then an alert message is sent to Bluetooth encoder and then it sends it to Bluetooth transmitter. User needs to install an application on his/her mobile which is used to view these alert messages.

Block diagram



Receiver Unit:

Explanation of Block diagram

1) Alcohol sensor:-

Alcohol sensor is the sensor that measures the amount of alcohol that is present in surrounding environment. There are contact and non-contact type of sensors. As the output signal of sensor is smaller in amplitude the signal power is also low therefore amplifiers are used. The weak signals are amplified using amplifiers.

2) ANALOG TO DIGITAL CONVERTER (ADC):-

ADC is used as a signal conditioner, which is given as an input to the micro controller.

Most of the information carrying signals such as voltage, current, temperature, pressure and time are available in analog form. However, for processing, transmission and storage purpose, it is often more convenient to express such signals in digital form. When expressed in digital form, they provide better accuracy and reduce noise.

The A to D conversion is a quantizing process whereby an analog signal is converted into equivalent binary word.

ADCs are classified into two general groups based on the conversion techniques. One involves comparing a given analog signal with the internally generated reference voltages. This group includes successive approximation, dual slope technique and flash A to D type converters. Another technique involves changing an analog signal into time or frequency and comparing these new parameters against known values. This group includes integrator converter and V to F converter.

3)MICRO-CONTROLLER (8051):-

It is the major part of the system. It maintains the temperature, humidity and light intensity to the desired value. The 8051 has one serial port that receives and transmits data. Transmission and reception can take place simultaneously. The four communication modes possible with 8051 present the system designer and programmer with opportunities to conduct very sophisticated data communication network. It is the heart of the system which controls all the inputs and the controlling action to be taken at the output. Microcontroller used here is the AT89S51.

4) LCD DISPLAY:-

Liquid Crystal Display which is commonly known as LCD is an Alphanumeric Display it means that it can display Alphabets, Numbers as well as special symbols thus LCD is a user friendly Display device which can be used for displaying various messages unlike seven segment display which can display only numbers and some of the alphabets. The only disadvantage of LCD over seven segment is that seven segment is robust display and be visualized from a longer distance as compared to LCD. Here we have used 16 x 2 Alphanumeric Display which means on this display we can display two lines with maximum of 16 characters in one line.

5) Buzzer:-

The error between the reference and present value is given to the controller, which responds correspondingly to the error and gives the feedback to the sensors. The Buzzer is turned on when alcohol crosses threshold value.

6) Bluetooth:-

It is used to send data to android mobile.

Applications

1) It should be used in schools, colleges and university campus to detect whether the students has consumed alcohol or not.

2) Various companies and industries can use this project to detect alcohol consumption by employees.

Advantages:

1) It helps to provide a place which is free of people who has consumed alcohol. Thus it makes place secure, safe and avoid undesirable situations.