Automatic engine locking system for drunken drivers

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Abstract— Drunken Driving is the major cause for the accidents. Drunken drivers are not in stable condition which leads to reckless driving and make inconvenience to others. To avoid these accidents a new design has developed when an alcohol is detected then automatically the vehicle engine turned off. The proposed design is implemented using AT89S52 microcontroller. The controller is programmed using PIC C compiler and alcohol is detected by using alcohol detector sensor. This design is used for safety of peoples life.

Keywords— AT89S52 controller, PIC c compiler, Alcohol detector sensor

I. INTRODUCTION

Now-a-days most of the accidents occurred due to alcohol consumption by the driver. The drivers who drank alcohol will be in unstable which cause rash driving which leads loss of valuable life of himself snd other people who moves on roads. Detection of alcohol can be done by stopping the vehicle and using a breath analyzer. The breath analyzer will detect the alcohol content from driver.

To avert these accidents new design is proposed which will turned off the engine when the alcohol is detected from driver. This auto engine off system will be safety for the drunken drivers and the people used the road. This system detects the alcohol in the vehicle then engine will be locked automatically which will reduce the road accidents due to drunken driving.

II. BLOCK DIAGRAM

The proposed system is illustrated in fig 1 which consists of At89S52 micro controller, Alcohol detection sensor, and buzzer, motor.

Initially all the devices are initiated, the alcohol detection sensor will measure the levels alcohol and sends the data to the micro controller. The micro controller will compare with the predefined limit if alcohol limit below the level then the vehicle will be run without any interruption else if alcohol limit consumed by driver exceeds the limit then the buzzer will be blown and LED will glow to the indication of other people that vehicle will stop.
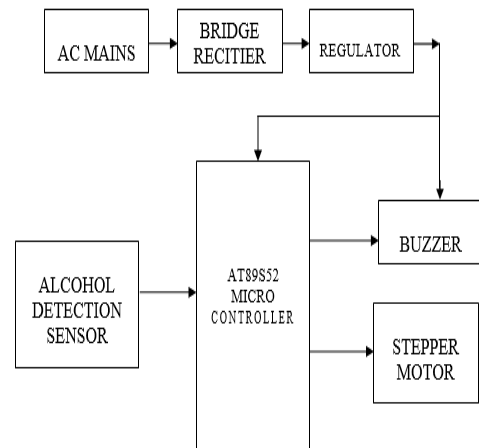

Fig 1. Proposed system

As soon as the alcohol is detected, it is not favorable to stop the vehicle when it is in accelerated speed. So here we are using a stepper motor which decreases the speed over a time and finally the vehicle gets stopped. Fig 2 depicts the flow chart of the system
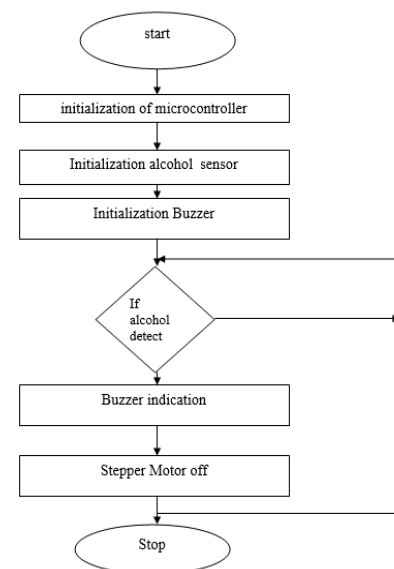

Fig 2 Flow chart of design

III. IMPLEMENTATION

The design is implemented in PIC C compiler, Proteus 7 where the controller is programmed in C in PIC C compiler and dumped on to it by Proteus 7 tool.

In PIC C compiler the steps need to compile the C code is

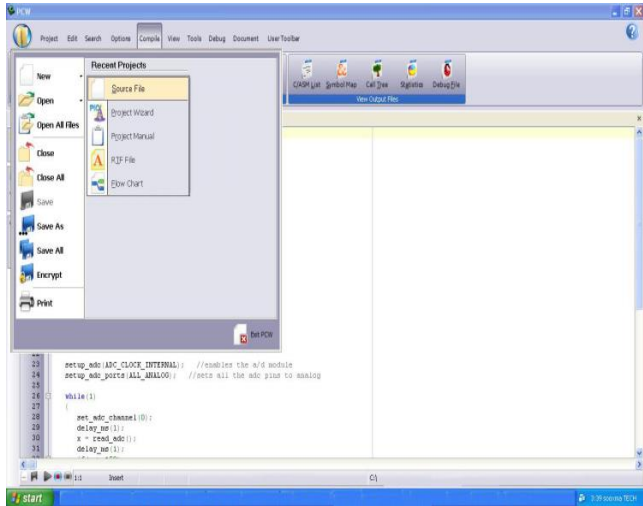Open a PIC C compiler and create a new source file which is sown in fig 3

Fig 3: creating new file using PIC C compiler

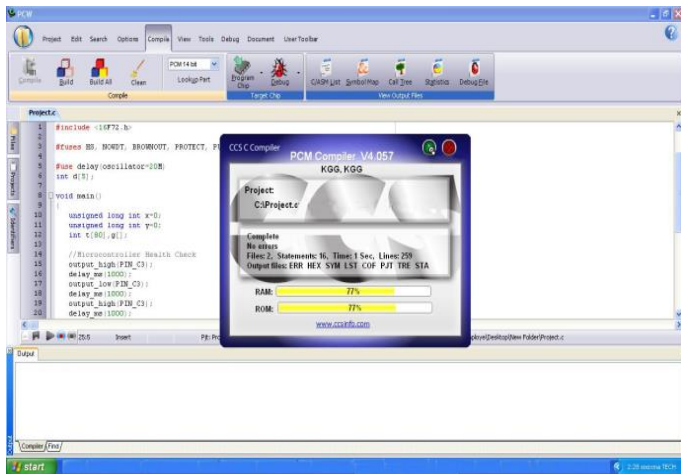After creating a new source file write the logic C code and go to Compile and check for the errors the compilation process shown in fig 4

Fig 4: compiling for errors and warnings

Fig 5 shows after compiling the file .hex file is generated in the folder which is used to dump file in controller
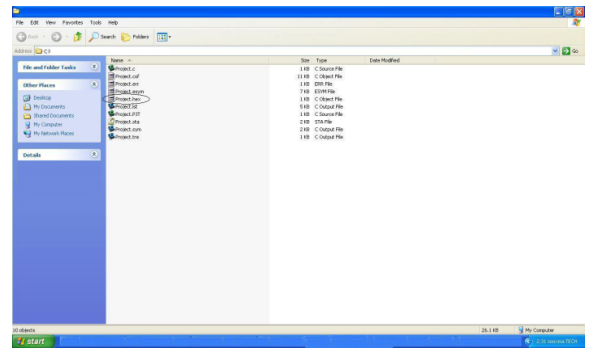

Fig 5:.hex file in the folder

To dump the .hex file in controller now Open Proteus 7 and click on IS1S6. Then select AT89S52 microcontroller. Then click on tools and select the check communication to make the connection between the PC and controller the process is shown in fig 6.
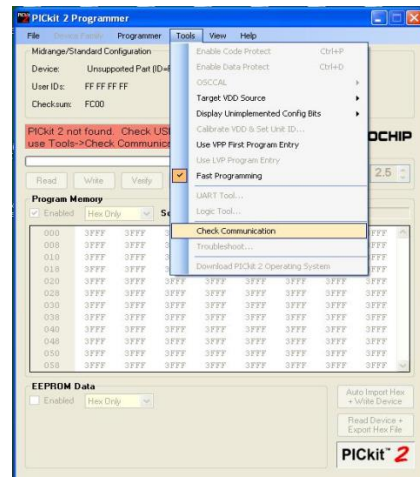

Fig 6: checking communications

After finding the communication then it displays PIC kit 2 found and connected in the window shown in fig 7
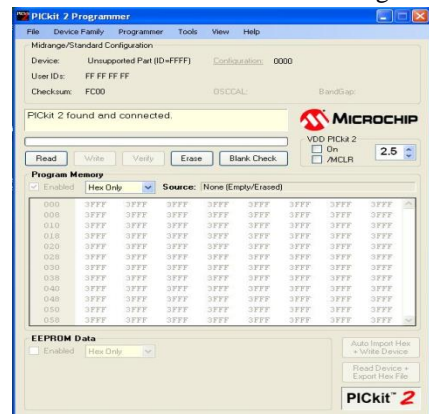

Fig 7: connecting the dumper to microcontroller

After making the communication then Import the .hex file from saved location by selecting File option and clicking on 'Import Hex' as shown in below window.
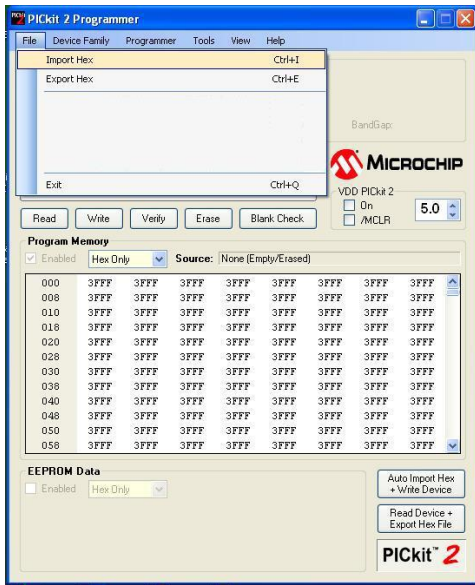

Fig 8: importing .hex file

After 'Import Hex' option browse the location of program and click the 'prog.hex' and click on 'open' for dumping the program into the microcontroller then it displays the programmed and successful in the window
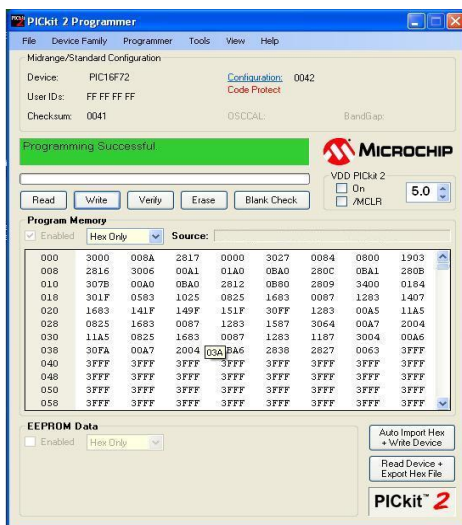

Fig 9: successfully dumped into microcontroller

IV. RESULTS

The fig 9 illustrates the prototyped design of the auto engine off when alcohol is detected where the Alcohol sensor, LCD display buzzer and Motor is connected to microcontroller.
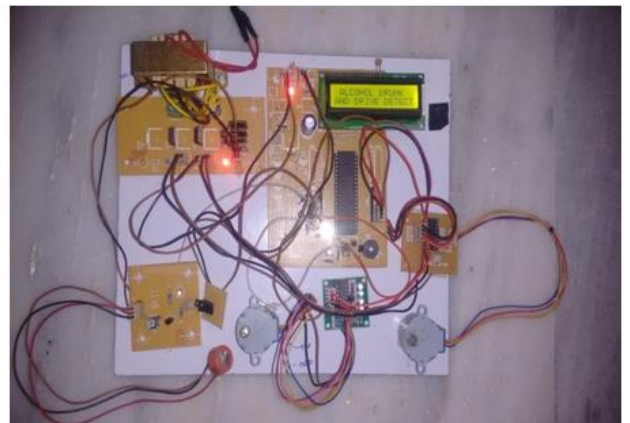

Fig 9. Connections of proposed design

When the vehicle is started. The sensor will check for the alcohol if there is no alcohol is detected then the motor runs and it displays a Vehicle started and alcohol is clear in LCD display which is illustrated in fig 10. The lights in driver circuit indicate the running motor
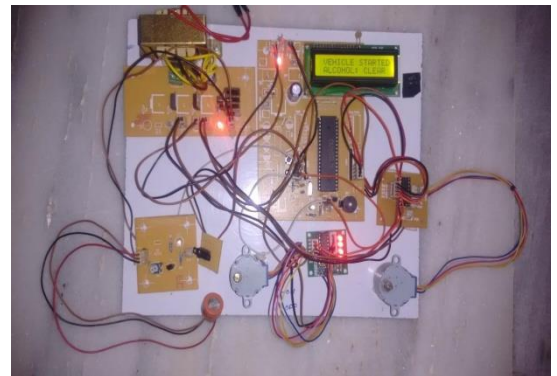

Fig 10 when alcohol is clear

When the alcohol is detected above the limit then buzzer will blow and LED is glow to indicate that vehicle is going to stop and Displays Alcohol is detected in LCD display
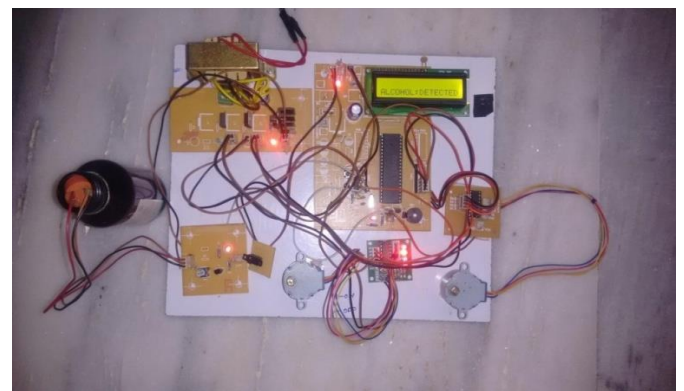

Fig 11: when alcohol is detected

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