Sinhgad Technical Education Society's

SINHGAD COLLEGE OF ENGINEERING, PUNE-41

Electronics & Telecommunication Engineering Department

Second Year Electronics and Telecommunication

PROJECT BASED LEARNING (PBL)

WORK BOOK

ACADEMIC YEAR: 2020/ 2021 **Semester: II**

Division: A **Batch: A4** **Group:1**

Project Title: ARDUINO BASED ALCOHOL DETECTION WITH GSM & GPS

Area of project: AUTOMATION, IOT

Sinhgad Institutes

SINHGAD COLLEGE of ENGINEERING, PUNE-41

Sr.No. 44/1, Vadgaon (Bk), Off Sinhgad Road, Pune – 411 041.

Department of E&TC Engineering

Certificate

This is to certify that, following students,

1. TANISHA TAMBE Roll No: 204A064
2. TEJAS GUJAL Roll No: 204A065
3. ANIKET TOTAWAR Roll No: 204A066
4. ADITYA VAIDYA Roll No: 204A068
5. VINAYAK BANSODE Roll No: 204A072

has completed all the Term Work & Practical Work in the subject **Project Based Learning (PBL)** satisfactorily in the department of E&TC Engineering as prescribed by Savitribai Phule Pune University, in the academic year 2020 -2021 .

Faculty-in-charge **Co-ordinator** **HoD**

Date: 30 /05 /2021

Rules & Regulations:

1. Handle the workbook very carefully.
2. All students must enter the correct information in the work book.
3. All entries in the PBL work book must be verified by the concerned Supervisor/Mentor.
4. Activities planned should be completed as per the instructions and schedule given by Supervisor/Mentor.
5. Assessment of TW for Project Based Learning (PBL) is out of 25 Marks which are based on attendance, regularity of completion of activities on given time and students involvement.
6. Assessment of PR for PBL is out of 50 Marks which are based on idea inception, outcomes of PBL, problem solving skills, solution provided, final product, documentation, demonstration, contest participation, and awareness.
7. Students need to submit final report of 5 to 10 pages in the prescribed format given at the end of this workbook.

Course Objectives:

- To emphasize project based learning activities that are long-term, interdisciplinary and student-centric.
- To inculcate independent and group learning by solving real world problem with the help of available resources.
- To be able to develop application based on the fundamentals of electronics and communication engineering by possibly the integration of previously acquired knowledge.
- To get practical experience in all steps in the life cycle of the development of electronic systems: specification, design, implementation, and testing.
- To be able to select and utilize appropriate hardware and software tools to design and analyze the proposed system.
- To provide every student the opportunity to get involved either individually or as a group so as to develop team skills and learn professionalism.

Course Outcomes:

CO1: Identify the real-world problem (possibly of interdisciplinary nature) through a rigorous literature survey and formulate / set relevant aim and objectives.

CO2: Contribute to society through proposed solution by strictly following professional ethics and safety measures.

CO3: Propose a suitable solution based on the fundamentals of electronics and communication engineering by possibly the integration of previously acquired knowledge.

CO4: Analyze the results and arrive at valid conclusion.

CO5: Use of technology in proposed work and demonstrate learning in oral and written form.

CO6: Develop ability to work as an individual and as a team member.

Group Information:

Division: A **Batch: A4** **Group: 1**

Roll No.	PRN No.	Name of Student	Mobile No.
204A064	72022701B	TANISHA TAMBE	8668327482
204A065	72022709H	TEJAS GUJAL	8806131222
204A066	72022722E	ANIKET TOTAWAR	9168452571
204A068	72022738M	ADITYA VAIDYA	9403300934
204A072	71905989F	VINAYAK BANSODE	7218196316

Name of Faculty/Mentor: _____

E-mail: _____

Mobile No.: _____

Literature Survey:

- Worrying about the drunken driving ,many existing system have worked on the problem but by using MQ2 gas sensor & PIC16F877A microcontroller.

- Suggests the system to overcome the issue but using mQ2 alcohol sensor has come up with flames .MQ2 alcohol sensor is not authentic and raises the chance of false alarm while we have used MQ3 which is highly authentic

- To prevent the mishap of drunken driving have used PIC16F877A microcontroller which is an out dated system and expensive one also which restrains its use to only certain class of society whereas we are using Arduino and Uno microcontroller which is advanced as well as economical.

Required H/W & S/W

- **HARDWARE SPECIFICATION:**
  - Capacitorsables and Connectors
  - Diodes
  - PCB
  - LED/ LDR
  - Push Buttons
  - Switch
  - Power supply
  - IC
  - IC Sockets
  - ARDUINO UNO
  - Buzzer
  - MQ3 alcohol sensor
  - LCD display
  - GPS module with antenna
  - GSM(SIM CARD) module

- **SOFTWARE SPECIFICATION**:
  - Arduino IDE
  - EASYEDA PCB SCHMATIC

References: (Website/Books/Papers)

- www.arduino.cc
- https://easyeda.com/ADITYA06
- Manila, Philippines-Design of Alcohol Detection System for Car Users thru Iris Recognition Pattern
- Landu Jiang, Xi Chen, Wenbo He, "SafeCam: Analyzing intersectionrelated driver behaviors using multi-sensor smartphones", PervasivComputing and Communications (PerCom), 2016 IEEE International Conference
- Bill Montgomery, "IoT benefits beyond traffic and lighting energy optimization", IEEE Consumer Electronics Magazine, Volume: 4, Issue: 4, Oct.2015

Weekly Planning Sheet

Week No.	Activity Planned	Activities Completed	Signature of Students	Signature of Faculty/Mentor
1	Group Selection.	Selected Three Topic 1.Smart Lighting System Using PIR 2.Third Eye For Blind Ultrasonic Vibrator Glove 3.Ardunio Based Alcohol Detection With GSM & GPS		
2	Research On 3 Different Topics	We distribute The Topics And Search About This Three Topic And Find Out Which Topic Is More Challenging And Exciting		
3	Finial Topic	Final Project Topic Name: ❖ Ardunio Based Alcohol Detection With GSM & GPS		
4	Discussion On The Important Sub-Topic	We Discuss IMP Parts & Find Out What's Is Used In Alcohol Detection		

Weekly Planning Sheet

Week No.	Activity Planned	Activities Completed	Signature of Students	Signature of Faculty/Mentor
5	Dividing Work	We Discuss The Topic Like Intro,Literature Survey,Hard And Software ,Diagram Etc.		
6	Presenting The Topic Presentation.	Completed		
7	Prepration For Presentation	We All Prepare For The Presentation Very Well Also Our Motive Is To Do The Best		
8	Completion of project workbook.	Completed		

Week No.	Activity Planned	Activities Completed	Signature of Students	Signature of Faculty/Mentor
9				
10				
11				
12				

Signature of PBL coordinator

ARDUINO BASED ALCOHOL DETECTION WITH GSM & GPS

A Report submitted in partial fulfillment of the requirements to complete Term Work & Practical work of Project Based Learning (PBL) in the department of

E&TC ENGINEERING

As prescribed by

SAVITRIBAI PHULE PUNE UNIVERSITY

By

TANISHA TAMBE	**PRN NO:72022701B**
TEJAS GUJAL	**PRN NO:72022709H**
ANIKET TOTAWAR	**PRN NO:72022722E**
ADITYA VAIDYA	**PRN NO:72022738M**
VINAYAK BANSODE	**PRN NO:71905989F**

Under the Guidance of

PROF. M. R. DEORE

First Year Engineering Department

Sinhgad College of Engineering

44/1, Vadgaon (Bk), Off Sinhgad Road, Pune – 411041

AUTOMATED STREET LIGHTS USING ARDUINO

Abstract

This system is aimed at making vehicle driving safer than before. This is implemented using Arduino. We have derived the

driver's condition in real time environment and we propose the detection of alcohol using alcohol detector connected to Arduino

such that when the level of alcohol crosses a permissible limit, the vehicle ignition system will turn off and the GPS module will

capture the present location of the vehicle. Also the GSM module will automatically send distress message to police or family

members.

Keywords:- Alcohol detection system, Vehicle controlling system, Accident prevention system, GSM, GPS, Arduino

Introduction

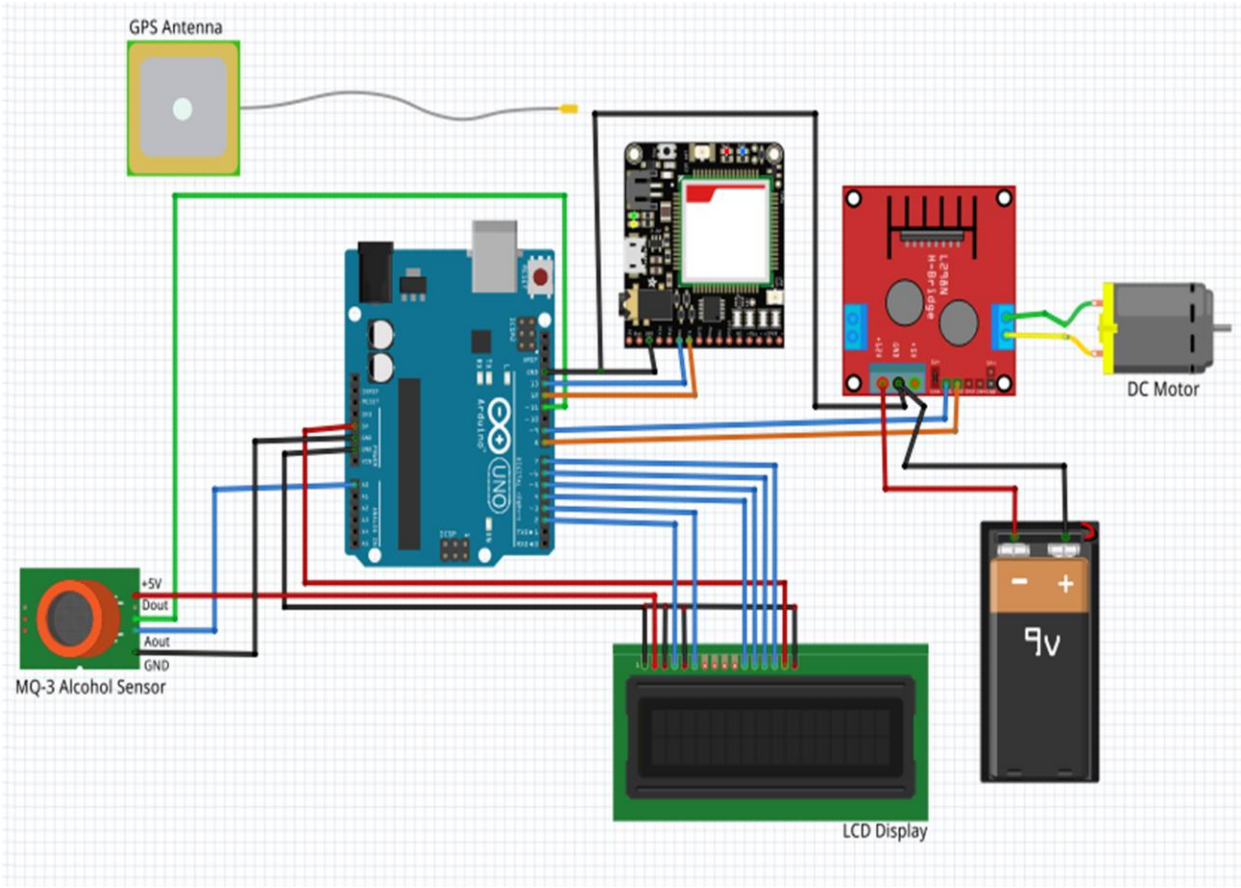
Drunk driving is one of the major reasons behind road accidents worldwide. In all of the road accident cases worldwide drivers have been observed to have excess alcohol content in their blood. So we here design a smart alcohol detector system

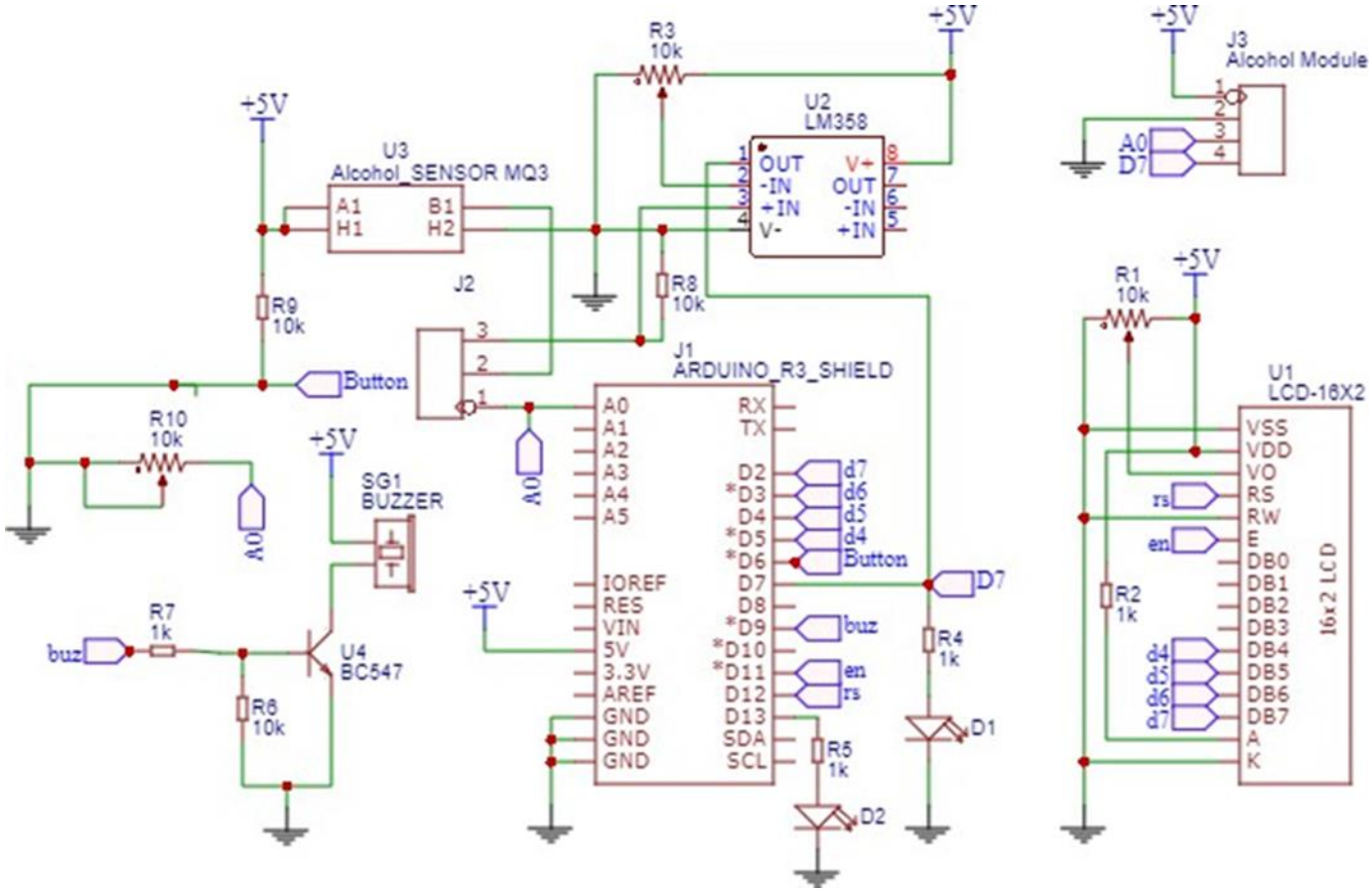
Using arduino coupled with gsm and gps for location transmission.

The system allows for automatic sensing of alcohol in breath, we also use a motor to demonstrate as a vehicle.

We further use a GPS module with GSM to send an SMS message to the concerned person in case alcohol is detected and stop the vehicle

Work carried out




+5V
R3
10k
U2
LM358
OUT
-IN
+IN
V-
V+
OUT
-IN
+IN
U3
Alcohol_SENSOR MQ3
A1
H1
B1
H2
R9
10k
J2
R8
10k
J1
ARDUINO_R3_SHIELD
Button
R10
10k
SG1
BUZZER
A0
R7
1k
buz
U4
BC547
R6
10k
IOREF
RES
VIN
5V
3.3V
AREF
GND
GND
GND
RX
TX
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
SDA
SCL
d7
d6
d5
d4
Button
buz
en
rs
R4
1k
D1
R5
1k
D2
J3
Alcohol Module
A0
D7
R1
10k
U1
LCD-16X2
VSS
VDD
VO
RS
RW
E
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
A
K
rs
en
R2
1k
16x2 LCD

Conclusion

- We have provided a very effective solution to develop an intelligent system for vehicles for alcohol detection whose core is Arduino. Since sensor has fine sensitivity range around 2 meters, it can suit to any vehicle and can easily be hidden from the suspects. The whole system has also an advantage of small volume and more reliability.
- As the growing public perception is that vehicle safety is more important, advances in public safety is gaining acceptance than in the past. Future scope of this system is to control the accidents causes due to alcohol consumption. This system improves the safety of human being. And hence providing the effective development in the automobile industry regarding to reduce the accidents cause due to

References

- www.arduino.cc
- https://easyeda.com/ADITYA06
- Manila, Philippines-Design of Alcohol Detection System for Car Users thru Iris Recognition Pattern
- Landu Jiang, Xi Chen, Wenbo He, "SafeCam: Analyzing intersectionrelated driver behaviors using multi-sensor smartphones", PervasivComputing and Communications (PerCom), 2016 IEEE International Conference
- Bill Montgomery, "IoT benefits beyond traffic and lighting energy optimization", IEEE Consumer Electronics Magazine, Volume: 4, Issue: 4, Oct.2015