BVRITHYDERABAD College of Engineering for Women

Department Of Information Technology

Smart Zone Based Vehicle Speed Suggestion Measures Using IoT

Under the Guidance of:

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Designation : Assistant Professor

Team - 06

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Abstract

- Speed control is very crucial since it aims to provide maximum road safety
- RF transmitter is placed at two ends of the premises
- ECU remapping helps in controlling the speed using manual control.
- It envisions a future that is accident-free and stresses the importance of road safety and rules beyond human errors and false testimony approval.

Introduction

- In a world where everyone rushes till the nth hour, a system like this is mandatory, to suggest the control of speed of any vehicle at smart zones like schools, hospitals, etc.

- This happens automatically using auto-suggestive manual control measures when the region is committed to that particular zone.

Problem Statement

- Rash driving is one of the major reasons due to which accidents occur. In a current crisis of increased populations leading to serious road traffic is uncontrollable. Being in such a critical situation causes dreadful accidents and increasing accident rates.
- As per the statistics from the World health organization (WHO), every year the lives of approximately 1.35 million people are cut short as a result of a road traffic crash.

Literature Survey

Sno	Author	Title of the paper	Name of the Journal/Conference-Published Year	Observation
1	Rahul Ramakrishnan; Ayusha Pendse; Chetna Sharma; Priya Chimurkar	Speed Breaker Detection and Mapping using IoT	IEEE Xplore - 2020	This model works only for detecting the speed breakers on road and warn the vehicles.
2	Ashok Reddy K.; Sakshi Patel; K.P. Bharath, Rajesh Kumar	Embedded Vehicle Speed Control and Over-Speed Violation Alert Using IoT	IEEE Xplore - 2019	It is used for generation of alerting the driver when the traffic rules are violated for over Speeding.

ARCHITECTURE

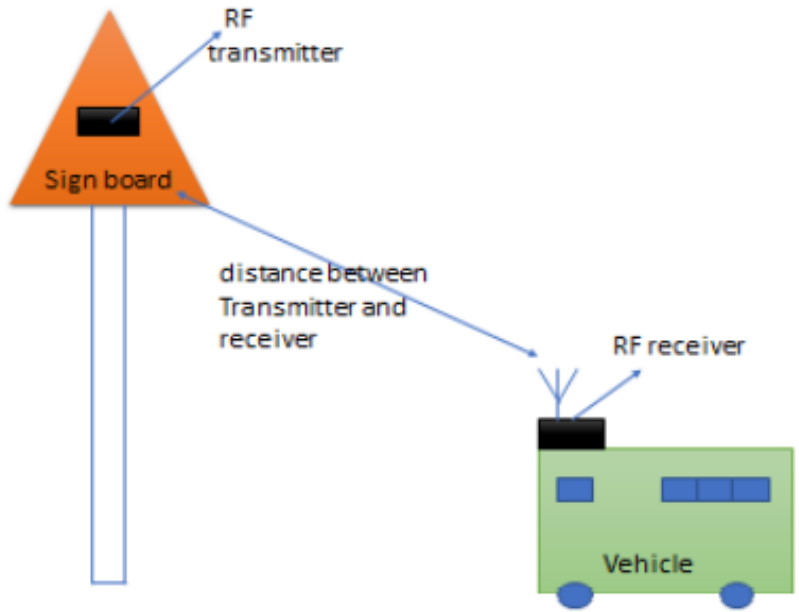

Figure:1

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MODULES

RF Module

⇩

ECU Re-Mapping

UMLDiagram

Activity Diagram

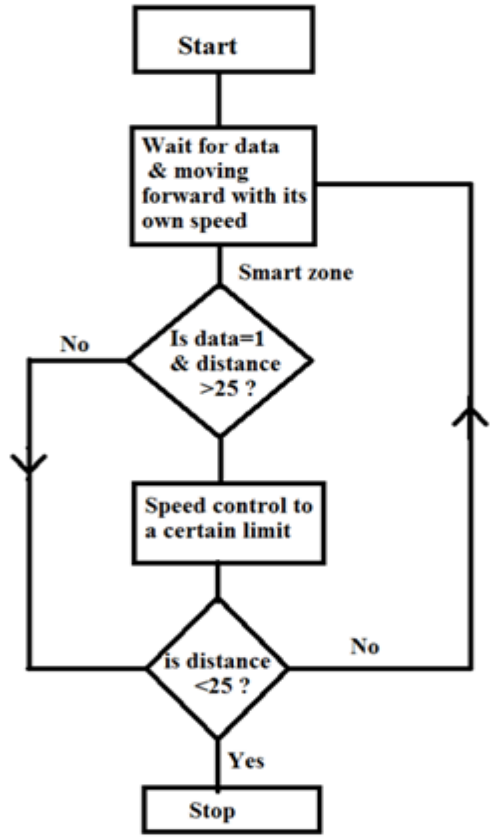
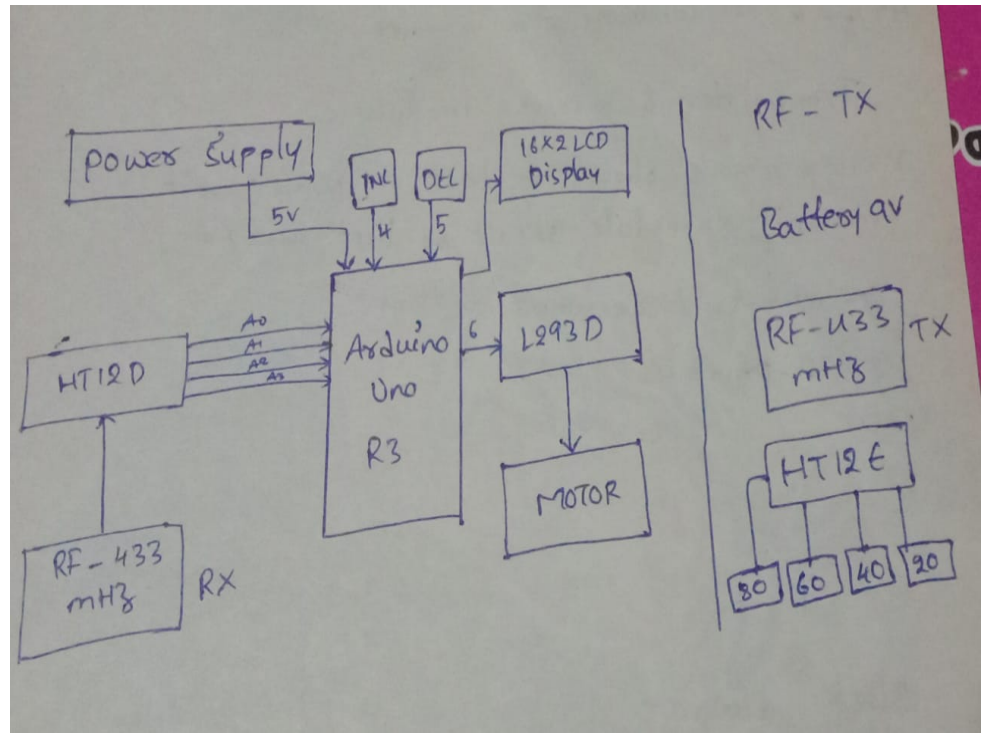


Figure:3

IMPLEMENTATION

- The image displays the Components that are being used



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IMPLEMENTATION

editor/bushsairaaz5119/163adb69-9f7c-40d8-aaa4-8dc950696b71

Arduino Due (Native USB Port)

UPGRADE PLAN

sketch_dec2a.ino | ReadMe.adoc

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(A0, A1, A2, A3, A4, A5);
int sw1 = 2;
int sw2 = 3;
int sw3 = 4;
int sw4 = 5;
int out1 = 9;
int out2 = 10;

void setup()
{
  pinMode(sw1, INPUT);
  pinMode(sw2, INPUT);
  pinMode(sw3, INPUT);
  pinMode(sw4, INPUT);
  pinMode(out1, OUTPUT);
  pinMode(out2, OUTPUT);
  Serial.begin(9600);
  lcd.begin(16, 2);


}
void loop()
{
  if ((digitalRead(sw1) == HIGH) && (digitalRead(sw2) == LOW) && (digitalRead(sw3) == LOW) && (digitalRead(sw4) == LOW))
  {
    analogWrite(out1, 255);
    lcd.setCursor(0, 0);
    lcd.print("HIGH SPEED              ");
```

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IMPLEMENTATION

https://create.arduino.cc/editor/bushsairaaz5119/163adb69-9f7c-40d8-aaa4-8dc950696b71

Arduino Due (Native USB Port)

sketch_dec2a.ino | ReadMe.adoc

```
30    lcd.setCursor(0, 1);
31    lcd.print("                          ");
32  }
33  else   if ((digitalRead(sw1) == LOW) && (digitalRead(sw2) == HIGH) && (digitalRead(sw3) == LOW) && (digitalRead(sw4) == LOW))
34  {
35    analogWrite(out1, 125);
36    lcd.setCursor(0, 0);
37    lcd.print("MEDIAM  SPEED              ");
38    lcd.setCursor(0, 1);
39    lcd.print("                          ");
40  }
41  else  if ((digitalRead(sw1) == LOW) && (digitalRead(sw2) == LOW) && (digitalRead(sw3) == HIGH) && (digitalRead(sw4) == LOW))
42  {
43    analogWrite(out1, 80);
44    lcd.setCursor(0, 0);
45    lcd.print("LOW SPEED              ");
46    lcd.setCursor(0, 1);
47    lcd.print("                          ");
48  }
49  else  if ((digitalRead(sw1) == LOW) && (digitalRead(sw2) == LOW) && (digitalRead(sw3) == LOW) && (digitalRead(sw4) == HIGH))
50  {
51    analogWrite(out1, 0);
52  }
53  else
54  { digitalWrite(out1, LOW);
55    digitalWrite(out2, LOW);
56
57    lcd.setCursor(0, 0);
58    lcd.print("RF BASED DC MOTOR");
59    lcd.setCursor(0, 1);
```

Success: Saved on your online Sketchbook and done verifying sketch_dec2a

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RESULTS

https://create.arduino.cc/editor/bushsairaaz5119/163adb69-9f7c-40d8-aaa4-8dc950696b71

Arduino Due (Native USB Port)

UPGRADE PLAN

sketch_dec2a.ino | ReadMe.adoc

```
    lcd.setCursor(0, 0);
    lcd.print("LOW SPEED             ");
    lcd.setCursor(0, 1);
    lcd.print("                      ");
  }
  else  if ((digitalRead(sw1) == LOW) && (digitalRead(sw2) == LOW) && (digitalRead(sw3) == LOW) && (digitalRead(sw4) == HIGH))
  {
    analogWrite(out1, 0);
  }
  else
  { digitalWrite(out1, LOW);
    digitalWrite(out2, LOW);

    lcd.setCursor(0, 0);
    lcd.print("RF BASED DC MOTOR");
    lcd.setCursor(0, 1);
    lcd.print("CONIROL SYSTEM");
  }
}
```

Success: Saved on your online Sketchbook and done verifying sketch_dec2a

```
/usr/local/bin/arduino-cli compile --fqbn arduino:sam:arduino_due_x --libraries /home/builder/opt/libraries/latest --build-cache-path /tmp --output-dir /tmp/507472325/build
--build-path /tmp/arduino-build-3DC53B0B0F16E06AB26579ECCF8F562D /tmp/507472325/sketch_dec2a

/home/builder/.arduino15/packages/arduino/tools/arm-none-eabi-gcc/4.8.3-2014q1/bin/arm-none-eabi-size -A /tmp/arduino-build-
3DC53B0B0F16E06AB26579ECCF8F562D/sketch_dec2a.ino.elf

Sketch uses 26200 bytes (4%) of program storage space. Maximum is 524288 bytes.
```

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Performance Measures

TIMELINE

Date	Duration	Task
15.09.22-17.10.22	4 Weeks	Domain Selection and Abstract Submission
18.10.22-31.10.22	2 Weeks	Literature Survey and Requirement Analysis
01.1 1.22-28.1 1.22	4 Weeks	Components Used and Speed Limit System Using Aurdino IDE
29.1 1.22-28.1 1.22	4 Weeks	Connecting The devices and Associating With the Prototype.

CONCLUSIONS

- We hereby conclude that this project is very easy to implement in an existing system.
- This imaginative strategy was created for the most part in the intention of decreasing the demise rates that are lost amid mishaps.
- It is an easily conveyable and cost-ef ficient system.
- So we notify that our idea and the review of a smart zone-based speed control system is a relatively more reliable option to ensure safety of the living beings.

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REFERENCES

- Rahul Ramakrishnan; Ayusha Pendse; Chetna Sharma; Priya Chimurkar "Speed Breaker Detection and Mapping using **IoT",** International Journal of Latest Trends in Engineering and Technology(2020).
- Ashok Reddy K.; Sakshi Patel; K.P. Bharath,Rajesh **Kumar"Embedded** Vehicle Speed Control and Over-Speed Violation Alert Using **IoT",** International Journal of Latest Trends in Engineering and Technology(2019).

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THANK YOU