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AI BASED SELF VEHICLE POLLUTION CHECK WITH PREDICTION ALERT

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Abstract *This paper presents automated control system for air pollution recognition in vehicles .As the use of vehicles is more in these days pollution is drastically , a solution to the problem aim to build an embedded system for controlling the pollution in vehicles .The emission from vehicles cannot be completely avoided but, definitely can be controlled by using semiconductor sensors for detecting the various gases .The system "pollution check in vehicles and alerting systems" uses IoT Technologies when the pollution emission level behind the already set threshold level . During this process the data will be uploaded into the IoT server. The synchronization and execution are monitored by microcontroller*

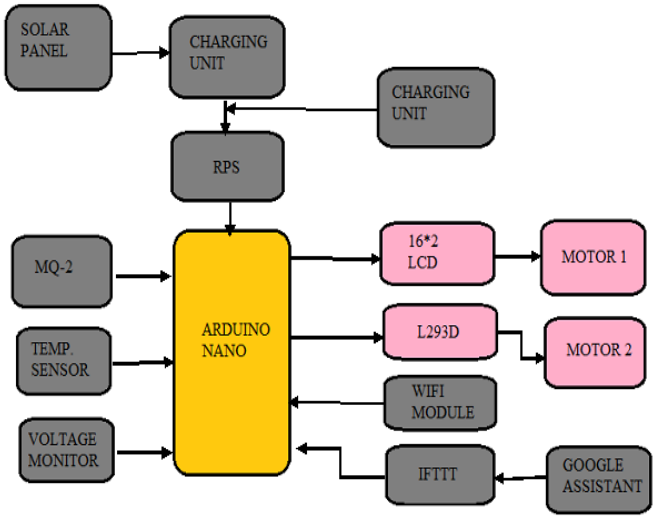
This equipment is placed inside a vehicle. In this equipment there are two sensors which are interfaced to the micro controller. Those are temperature sensor and CO_2 sensor, through which can measure the temperature and amount of CO_2 released from the vehicle. These values are also displayed on LCD, whenever these values exceed the threshold intimation is given to the RTA including vehicles exact position. This system consists of power supply of single phase 230VAC then it is stepped down to 5V DC which is sufficient to our system

Key Words: AI, MICRO CONTROLLER, TEMPERATURE AND GAS SENSOR, LMDC MOTOR DRIVER

1. INTRODUCTION:

This paper demonstrates about the self pollution checking in vehicles. As of now the practice of transportation vehicles is increasing day to day the majority of the pollution causing gases are evolved from these vehicles which is causing severe AIR POLLUTION that effects the humans, animals and whole environment. Need of monitoring and control of this pollution levels which further makes our life easy. This paper helps us to detect the pollution levels in all vehicles with the help of present technology like ARTIFICIAL INTELLIGENCE by this technology, we can easily check the pollution levels and it helps to take further predictions which controls the present and upcoming pollution levels. By this technology and with less time gas levels can be calculated.

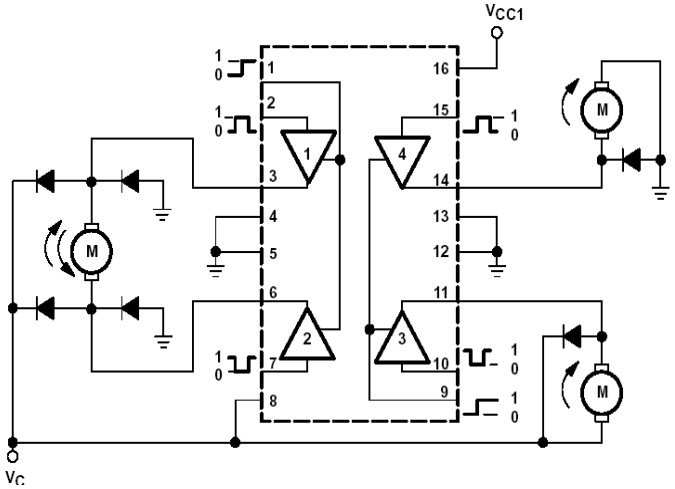
1.1 BLOCK DIAGRAM



2. HARDWARE COMPONENTS

- Regulator power supply
- Micro controller
- Pollution sensor (MQ2)
- Temperature sensor
- Motor driver
- LCD
- Motor
- Solar panel
- IOT module

3. LMDC MOTOR DRIVER CIRCUIT



4. Pin diagram

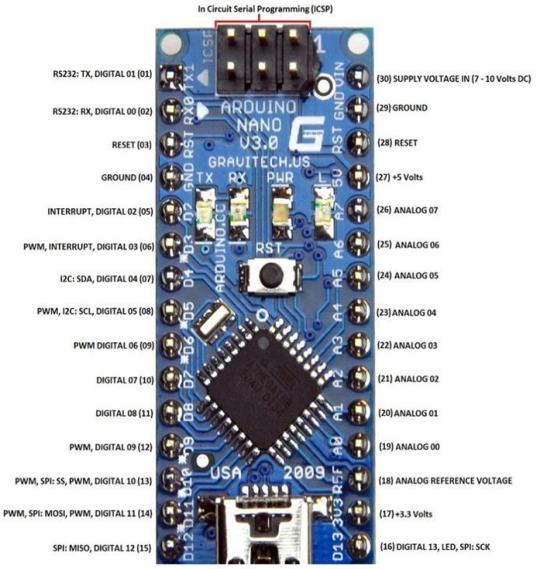


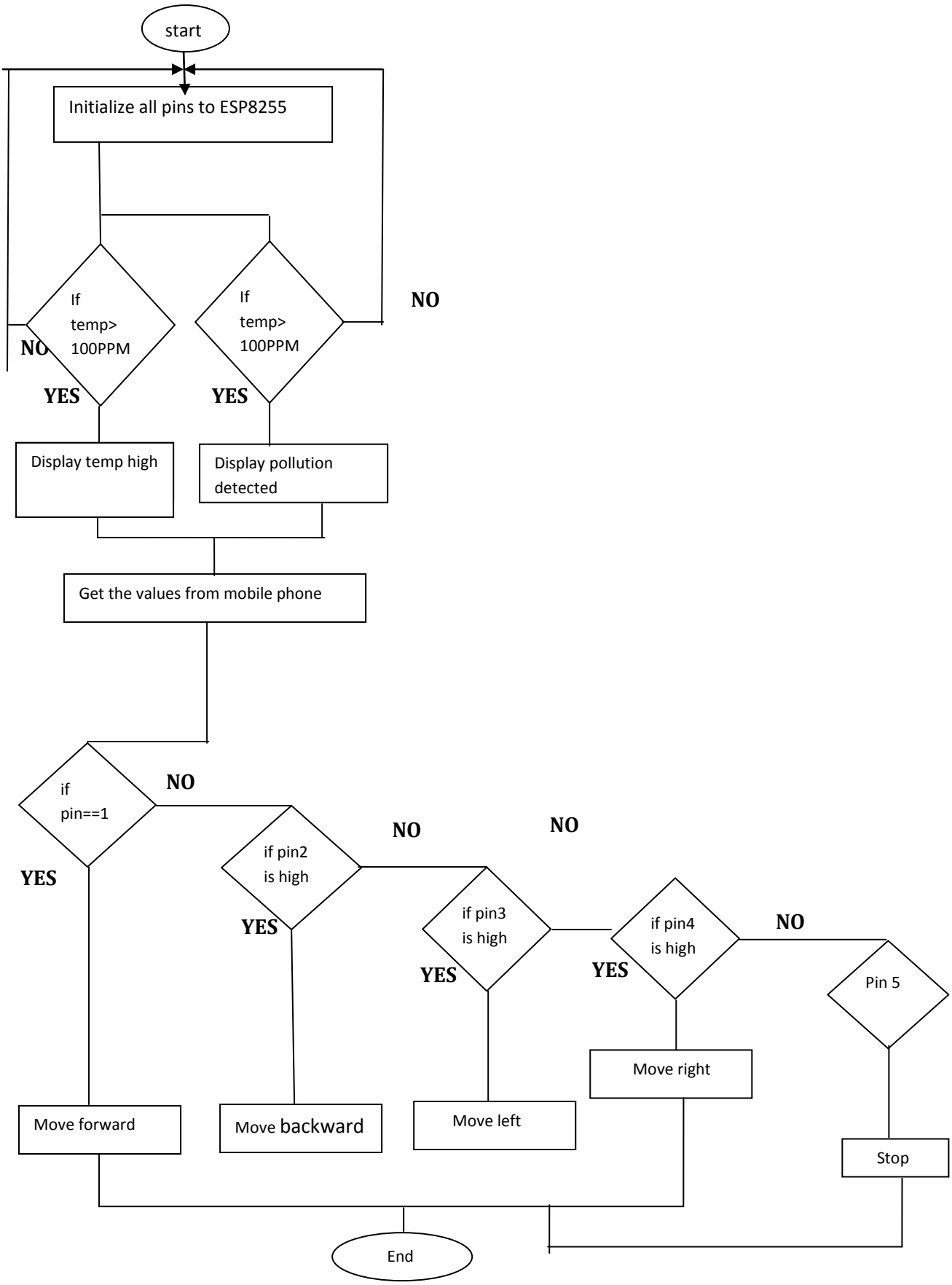
Fig -

POTENTIALS OF THIS EQUIPMENT:

- Less usage of power and no intervention of humans.
- This equipment by its own drafts the presence of vehicle and also weather it is day or night time.
- Once this Equipment is switched on, it automatically performs all this actions without manual operation.
- It is easy to monitor and control the operation of the system with present technology
- Because of all these potentials mentioned, this equipment may be used in all solar based street lights to come out of practical problem linked with the use of solar cell panels is regarding the storage of electricity general by them.

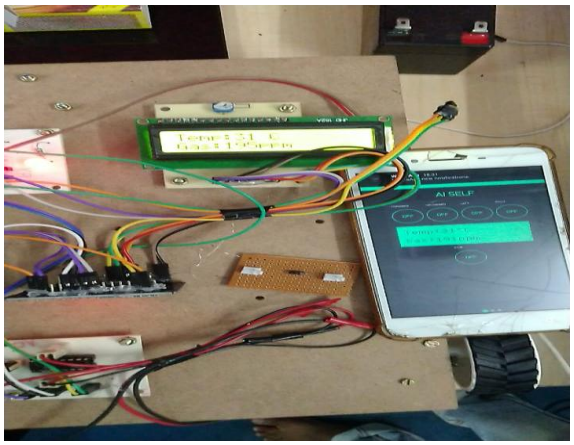
The electricity generated by the solar cell panel is stored during the day with the help of storage batteries which give us only direct current. But to operate any other electrical devices need alternating current. Therefore, to convert DC to AC before using any appliance and thus it increases the cost of such solar panels as the sources of electricity.

FLOWCHART:

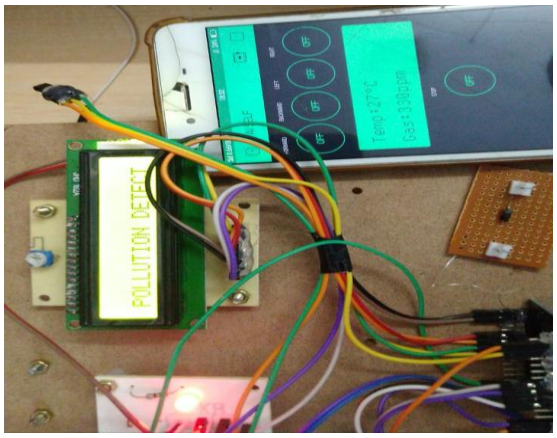

start
Initialize all pins to ESP8255
If temp> 100PPM
NO
YES
Display temp high
If temp> 100PPM
NO
YES
Display pollution detected
Get the values from mobile phone
if pin==1
NO
YES
Move forward
if pin2 is high
NO
YES
Move backward
if pin3 is high
NO
YES
Move left
if pin4 is high
NO
YES
Move right
Pin 5
Stop
End

5. CONCLUSIONS

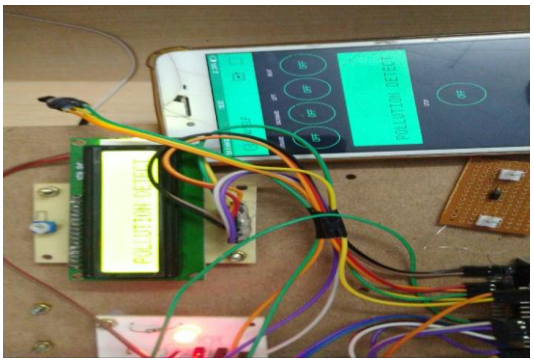
This paper projects about "AI based self-vehicle pollution check with prediction alert "equipment, it is very supportive as it can self-monitor the pollution levels released by vehicles. In this equipment ARTIFICIAL INTELLIGENCE is implemented to calculate and to control the pollution. This equipment can control the pollution levels in the environment further it gives an alert when exceeding the threshold values. This pollution levels will be sent to PCB and RTA and hence they will limit the system designs based on effect produced, With the present technology this equipment can easily monitor and control the harmful gas levels.



When the pollution is < 300 PPM



when pollution level is >300PPM (set value)



When pollution is detected

6. FUTURE SCOPE

With the implementation of latest technologies made our life simple and easy. This equipment can be made very simple and easy with the help of upcoming technology .Instantaneously this equipment can calculate, monitor and control the required pollution levels .This technology can also be implemented space technology and can be implemented them in all the gas releasing systems to provide clean and clear environment .Further this work can be Extended by incorporating AIR PURIFIERS in the vehicle to reduce the harmful gases and minimize the effects produced by them in coming future.

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BIOGRAPHIES

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