



# AAVISHKAR



VEHICLE EMISSION  
MONITORING  
AND CONTROL  
USING IOT



## INTRODUCTION

It is critical that we efficiently monitor and control vehicle emissions to reduce these emissions, which are one of the most significant sources of air pollution and can have major consequences on human health and the environment. The Internet of Things uses the Internet to create real-time connections between components and the Internet, enabling emissions monitoring and control systems to be developed in a more efficient and effective approach than is currently available



## DISCUSSION

**Solution :** Using a custom logic algorithm as named **‘Cooldown mode’** to avoid heating issue

**Problem Faced :-** Temperatures issue finding alternative solution using **DTH sensor** but cannot resist/ handle more heat  
Requirement Gathering of available Existing system



## OBJECTIVE

- Identify and target vehicles that are emitting excessive pollution
- Protect public health
- Continuously monitor vehicle emissions
- Provide real-time data on vehicle emissions



## METHODOLOGY

**Define the analog pins that are attached to the gas sensors(mq135, mq7, and mq2Pin). In the primary loop:**

- 1.Read the MQ-135 sensor’s analog value and save it in the variable mq135Value
- 2.Read the MQ-7 sensor’s analog value and save it in the variable mq7Value.
- 3.Read the MQ-2 sensor’s analog value and put it in the variable mq2Value
- 4.. Depending on the sensor specifications and calibration data, you can optionally execute calibration or further data processing on these raw analog values to convert them into useful gas concentration readings
- 5.. Print or use the values as needed (for example, printing to the serial monitor, sending data to a display, or sending across a network).



## ADVANTAGE

- Real time vehicle emission monitoring
- Portable and easy to setup
- Affordable
- Wifi support
- Mobile app support to notify service alert



## DISADVANTAGE

- Data accuracy
- False positives:



## CONCLUSION

These systems can gather information on car emissions in run time, allowing for the identification of high-emitting vehicles and the development of focused emission reduction plans. The effectiveness of emission control measures can be monitored using IOT-based systems, which can also give information for the creation of regulations. IoT-based vehicle emission monitoring and control systems can be expanded further and improved in a variety of areas.



## PROTOTYPE



## OUTPUT

```
11:40:14.452 -> MQ-2 Raw Value: 16
11:40:14.452 ->
11:40:15.411 -> MQ-135 Raw Value: 17
11:40:15.411 -> MQ-7 Raw Value: 213
11:40:15.443 -> MQ-2 Raw Value: 19
11:40:15.477 ->
11:40:16.410 -> MQ-135 Raw Value: 18
11:40:16.410 -> MQ-7 Raw Value: 212
11:40:16.443 -> MQ-2 Raw Value: 16
11:40:16.478 ->
11:40:17.410 -> MQ-135 Raw Value: 16
11:40:17.410 -> MQ-7 Raw Value: 209
11:40:17.441 -> MQ-2 Raw Value: 16
11:40:17.482 ->
11:40:18.394 -> MQ-135 Raw Value: 16
11:40:18.426 -> MQ-7 Raw Value: 263
11:40:18.426 -> MQ-2 Raw Value: 16
11:40:18.462 ->
11:40:19.410 -> MQ-135 Raw Value: 16
11:40:19.410 -> MQ-7 Raw Value: 208
11:40:19.443 -> MQ-2 Raw Value: 16
11:40:19.478 ->
11:40:20.398 -> MQ-135 Raw Value: 18
11:40:20.420 -> MQ-7 Raw Value: 244
11:40:20.456 -> MQ-2 Raw Value: 17
11:40:20.456 ->
11:40:21.409 -> MQ-135 Raw Value: 16
11:40:21.409 -> MQ-7 Raw Value: 238
```



SCAN QR CODE  
FOR  
ADDITIONAL  
DETAILS

