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(Autonomous)

Transform Yourself

SCHOOL OF BUILDING AND MECHANICAL SCIENCES

DEPARTMENT OF MECHATRONICS ENGINEERING

AUTOMATIC SERVICE INDICATOR IN TWO WHEELERS FOR INCOMPLETE COMBUSTION

BATCH NO: 1 **MENTOR: DR. V. G. PRATHEEP**

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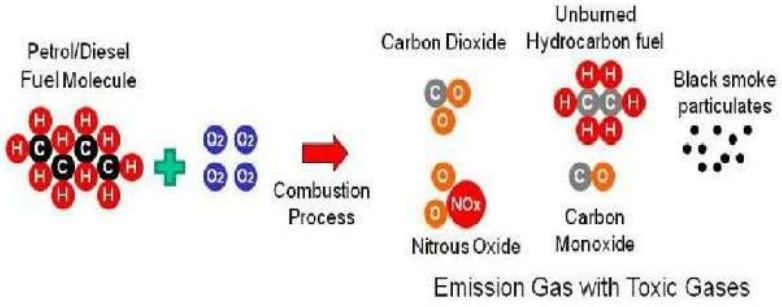
PROBLEM STATEMENT

- Two wheelers are never maintained after the initial periodical services.
- Due to improper maintenance, two wheelers starts to emit toxic and incompletely combusted gas
- It consist of Carbon monoxide(48%), hydrocarbons(5%), nitrogen oxides (>2%) and particulate matter
- If left unnoticed, it ends up in exchange of the whole system or irreplaceable
- This is one of the cause for major air pollution problem which is left unnoticed.

EXISTING SYSTEM

- The existing system have fuel level indication only and there is no other indication for vehicle service in two wheelers.
- Other than two wheelers, modern day cars have a sensor to indicate for vehicle service.

COMBUSTION PROCESS



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SOLUTION PROPOSED

- Due to the incomplete combustion of the fuel, the engines starts to release toxic gas consist of **carbon monoxide**, **hydrocarbons** from unburnt fuel, **nitrogen oxides** (NOx) from excessive combustion temperatures, and **particulate matter**.
- So, We proposed solution for monitoring vehicle condition and predict the days to service and its lifetime.
- Using a series of gas sensors, the presence and level of the contaminants of the exhaust gas can be monitored.
- With preset limitations of the amount of the contaminants, we can notice whenever the amount exceeds.
- The amount and all other functions are controlled with NodeMcu ESP8266.

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SOLUTION PROPOSED

- It receives the amount of the contaminants from the sensors and then calculation for service date, number of days left for service and loss of money with respect to the loss of energy is done and displayed to the LCD display.

Why IOT?

- In case of monitoring a system, we need to maintain routine information of the system. So, Here we are collecting the information using ESP8266 Wi-Fi module. Using this information, we can give a direct remainder to user's mobile phone.

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APPARATUS REQUIRED

S.NO	APPARATUS NAME	RANGE	TYPE	QUANTITY
1	Carbon monoxide sensor	10 – 10000ppm	-	1
2	Nitrogen oxide sensor	-	-	1
3	VOC sensor	-	-	1
4	NodeMCU ESP8266	-	-	1
5	LCD display	-	16 x 2	1
6	Connecting Wires	-	-	-

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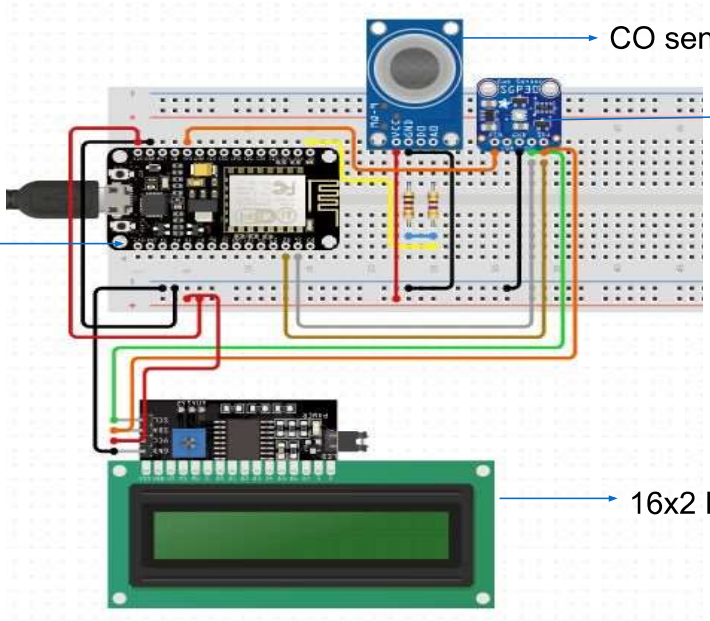
CIRCUIT DIAGRAM/DESIGN



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Objective of proposed solution

- 57% of world's carbon monoxide emission is due to two wheelers. Approximately two wheeler population nears 20 crores in the world.
- Our proposed solution will be a preventive maintenance for two wheelers which could cause global impact.
- Our main objective is to predict vehicle service date and loss of money with respect to the energy loss. This small change can cause a big difference.