COMMUNITY SERVICE PROJECT

ON

Air Quality Monitoring System in ITI Road, Vijayawada

A project report submitted in the partial fulfillment of

Requirements for the award of the Degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

Name of the Student: **T. Pallavi Reddy**

Registration Number: **21501A05H3**

Year of Study: **II B.Tech**

Name of the College: **Prasad V. Potluri Siddhartha Institute of Technology**

Period of CSP: **6 weeks** From: **28/11/2022** To: **21/01/2023**

Under the Guidance of

Dr. Ravuri Daniel, Associate Professor,

Department of Computer Science and Engineering

Prasad V Potluri Siddhartha Institute of Technology

(Permanently affiliated to JNTU: Kakinada, Approved by AICTE)

(An NBA &NAAC A+ accredited and ISO 9001:2015 certified Institution)

Kanuru, Vijayawada -520007

2022-2023

PRASAD V POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY

Autonomous & Permanent Affiliation to JNTUK-Kakinada, AICTE approved

An NBA & NAAC accredited and ISO 9001:2015 Certified Institution

KANURU, VIJAYAWADA – 520007

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the community service project entitled "**Air Quality Monitoring System in ITI Road , Vijayawada**" is submitted by **T. Pallavi Reddy (21501A05H3)**, II B.Tech I semester in partial fulfillment of the requirement for the award of **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE AND ENGINEERING** and underwent community service in **ITI Road , Vijayawada** from 28/11/2022 to 21/01/2023 (6 Weeks) in the academic year 2022-2023.

The report submitted on:30-01-2023.

Signature of the Guide
Dr. Ravuri Daniel,
Associate Professor,
Dept. of CSE, PVPSIT.

Signature of the HOD
Dr. A. Jayalakshmi,
Professor & HOD,
Dept. of CSE, PVPSIT.

CERTIFICATE FROM OFFICIAL OF THE COMMUNITY

This is to certify that the community service project entitled "**Air Quality Monitoring System in ITI Road, Vijayawada**" is submitted by **T. Pallavi Reddy (21501A05H3)**, Department of Computer Science and Engineering, Prasad V. Potluri Siddhartha Institute of Technology underwent community service in **ITI Road , Vijayawada** from 28/11/2022 to 21/01/2023.

The overall performance of the Community Service Volunteer during his/her community service is found to be Good *(Satisfactory/Good)*.

Authorized Signatory

WARD ADMINISTRATIVE SECRETARY
Sachivalayam I.D. No:2009597
Patamata - 03, 03-43 Div.No:8,
Vijayawada Municipal Corporation

STUDENT's DECLARATION

I, **T. Pallavi Reddy,** a student of B.Tech Program, Reg. No. **21501A05H3** of the Department of Computer Science and Engineering, Prasad V. Potluri Siddhartha Institute of Technology do hereby declare that I have completed the mandatory community service from 28/11/2022 to 21/01/2023 in **ITI Road , Vijayawada** under the guidance of **Dr. Ravuri Daniel**, Associate Professor, Department of Computer Science and Engineering, PVPSIT.

T. Pallavi 28/01/2023

Signature and Date

T. Pallavi Reddy(21501A05H3)

ACKNOWLEDGEMENT

I would like to express my special appreciation and thanks to **Government of Andhra Pradesh** and **JNTUK Kakinada** for initiation of community service project.

I would especially like to thank **Dr. Harika Done** for advice, support and encouragement in completing the community service project work.

I wanted to take a moment to thank my beloved Principal, **Dr. K. Sivaji Babu** for arranging all the facilities and resources needed for the project work

I feel elated to thank my Professor and Head of the Department, **Dr. A. Jayalakshmi** for all the support and encouragement you've shown me in completion of community service project work.

I also thankful for my project in-charge **Dr. Ravuri Daniel, Associate Professor**, Computer Science & Engineering, for their constant encouragement and valuable recommendations throughout the course of the project work.

It is with the immense pleasure that I would like to express my indebted gratitude to my guide **Dr. Ravuri Daniel, Associate Professor**, Computer Science & Engineering, who has guided and encouraged me a lot in every step of the project work.

I am very much grateful to all the staff and faculty of the department of CSE for their cooperation during the course of project work.

I also like to express my sincere thanks to each and every one of college staff, who have contributed their help and guidance for the successful completion of the project.

At last, a special thanks to my family. Words cannot express how grateful I am to my family members for their support during my project work.

T. Pallavi

Project Associate

T. Pallavi Reddy (21501A05H3)

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CHAPTER 1: EXECUTIVE SUMMARY

The community service report shall have only a one-page executive summary. It shall include a brief description of the Community and summary of all the activities done by the student in CSP and five or more learning objectives and outcomes.

I selected ITI road, which is a locality in Vijayawada City in Andhra Pradesh State, India. It belongs to Andhra Region. It contains several Schools, Hospitals, Restaurants, Banks and Markets. ITI road is a public road located in the Central part of Vijayawada krishna district of the Indian state of Andhra Pradesh.

As per the Municipal Administration and Urban Development Department, it became a part of Vijayawada metropolitan area. ITI Road stretches for a length of 1.7 Kilo meters in the city Vijayawada in subdistrict Vijayawada (Urban). It connects benz circle, labbipet, guru nanak colony , LIC colony, Jayaprakash nagar, Christurajupuram areas. It could considered as one of the busy chowks (roundabout/traffic circle) and a prominent landmark. It also leads to **NH16** service road.

Some of the places that can be concentrated are:

- Ramesh Hospitals.
- Government Industrial Training Institute .
- School of Planning and Architecture .
- Amma kalyana Mandapam.

I visited these areas and collected information about the functioning, advantages, problems, schemes, available hospitals and petrol bunks, banks and also interacted with people near about their opinions on the area. Especially I collected the information about the air pollution and its quality in that area, Since it allows lot of vehicles into that area which might cause some consequences to the people living around it.

I gathered the Information regarding the no of vehicles pass in that road per one hour and created a simple statistics based on that and the amount of air pollution caused to the neighbor hood because of the vehicles .

After gathering the information, I created a Air Quality Monitoring System that can help people know Quality of Air and its conditions of ITI road . For this Project I learned the application of technologies like Internet of things, Adruino Uno , NodeMcu, Gas Sensors and etc . This project helped me in learning new technologies and helped me in developing knowledge.

CHAPTER 2: OVERVIEW OF THE COMMUNITY

About the Community/Village/Habitation including historical profile of the community / habitation, community diversity, traditions, ethics and values. Brief note on Socio-Economic conditions of the Community/Habitation.

ITI road is a public road located in the Central part of Vijayawada City, krishna district of the Indian state Andhra Pradesh. It belongs to Andhra Region. It got its name due to the location of the college called Government Industrial Training Institute (**ITI**) in it. The road itself connects to different areas and streets in that neighborhood. The neighborhood contains several Schools, Hospitals, Restaurants, Banks and Markets. Some of the areas that surround it are Siddhartha nagar, Jayaprakash nagar, LIC colony, Christurajupuram, Prashant nagar etc. One end of the road is connected to A.S Rama Rao Road and the other end of the road is connected to NH 16 Service Road.

It is a long road that stretches upto 1.7 Kilo meters. To the north of the road there are areas like LIC Colony, Prashant Nagar. To the South of the Road there is an area called Siddhartha Nagar. To the east of the road Christurajupuram village is located. To the west there are many other areas like Gurunanak Nagar. Bharathi Nagar etc. The road connects benz circle, Labbipet, Gurunanak colony, LIC colony, Jayaprakash nagar, Christurajupuram areas.

ITI Road Vijayawada.

Some of the concentrated places are Ramesh Hospital, which is a private hospital that provides 24/7 facilities to the people. Its considered as one of the best private hospital in Vijayawada. Andhra Loyola Institute of Engineering and Technology, Government Industrial Training Institute , School of Planning and Architecture , Government Polytechnic college are the colleges and schools that are located near ITI road. ITI road is connected to several colleges and a school in that area. Because of this the road gets busy with students during the mornings and evenings. There are other places like Amma kalyana mandapam, SBI bank, some restaurants , hotels etc. that are frequently visited .

Traffic in the road is pretty decent most of the time , but it increases often sometimes especially during the morinings and evenings.

One thing that can be said about the ITI road is that the road is mostly clean and tidy, and contains some decent amount of Trees in it which provide good environment to the area.

Industrial Training Institute

CHAPTER 3: COMMUNITY SERVICE PART

Description of the Activities undertaken in the Community during the Community ServiceProject. This part could end by reflecting on what kind of values, life skills, and technical skills the student acquired.

I gathered information from the people who often travel trough the ITI road. According to them the road helps them to reach their destinations smoothly. They also said that the maintenance of the road is good and satisfactory. They even claimed that the accidents happen very rarely in the road due to its spacious area. The interaction with the local people made me feel that public places like roads are also like our homes which affects our day to day lifestyles and we should consider them as respectable places.

I also interacted with students who go to the near by colleges, and found that the road is a bit more busy in the morning and evening as a mass of people used to go and return from their respective works and students go to their houses. It created a awareness in me that every single planning and construction of infrastructure, road are all very much needed to make our daily life easy.

I also visited Ramesh Hospital and interacted with some of the doctors and patients. They are satisfied with the neighborhood and the conditions in that area. But they feel that there are some small problems that include noise during the traffic on the road and pollution from vehicles since the hospital was situated near to the edge of the road. But the hospital administration created their own alternatives to overcome the problem.

In order the get some insight on the level of pollution caused by vehicles that

travel through the road , I took a survey on the no of vehicles that pass through the road per hour . I observed that the average no of vehicles that go through the road per hour is approximately 60-70 vehicles. The no of vehicles crosses 100 during morning and evening times. This air pollution caused by the vehicles might bring some consequences to the people in the area. So I decided to create a “Air Quality Monitoring System “ that measures the quality of air in order to keep track of the pollution. By using Internet of Things (IoT) , Arduino , Node Mcu , some sensors and programming languages the system is created to help the people.

CHAPTER 4: ACTIVITY LOG

4.1 ACTIVITY LOG FOR THE FIRST WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 28.11.2022	Selection of historical profile of the habitation	Identifying the places.	
Day – 2 29.11.2022	Selection of historical profile of the habitation	Identifying the places	
Day – 3 30.11.2022	Identification of the problem(s)	Observation in public areas	
Day – 4 01.12.2022	Data collection and statistics related to habitation	Knowing the lives of people	
Day – 5 02.12.2022	Solution to the problem	Identifying important information.	
Day –6 03.12.2022	Scope and significance of the work	Identifying important information	

WEEKLY REPORT

WEEK – 1 (from 28/11/2022 to 03/12/2022)

Objective of the Activity Done: Problem identification and solution
Detailed Report: ITI road is located in central part of Vijayawada. It connects several roads, areas. Its neighborhood contains several colleges and schools. There is a Hospital called Ramesh Hospital. Colleges that are present near to the road are Government Industrial Training Institute, Andhra Loyola Institute of Engineering and Technology, Government Polytechnic College. The road is clean and tidy. But the road is busy and get more traffic during the morning and evening times, this increases the air pollution in that area and causes health problems and other consequences. An air quality detection machine can be used to monitor the air quality and alert people to take precaution whenever there is an rise in the pollution level.

4.2 ACTIVITY LOG FOR THE SECOND WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 05.12.2022	Identification of different requirements.	Observation and analyzation skills	
Day – 2 06.12.2022	Identification of different requirements.	Observation and analyzation skills	
Day – 3 07.12.2022	Specifications of Hardware/Software requirements	Observation and analyzation skills	
Day – 4 08.12.2022	Specifications of Hardware/Software requirements	Observation and analyzation skills	
Day – 5 09.12.2022	Specifications of Functional/ Non-functional requirements	Observation and analyzation skills	
Day –6 10.12.2022	Specifications of Functional/ Non-functional requirements	Observation and analyzation skills	

WEEKLY REPORT

WEEK – 2 (from 05/12/2022 to 10/12/2022)

Objective of the Activity Done: Gathering of requirements
Detailed Report: Node Mcu is a open source firmware developed with the ESP8266 wifi chip it is used as the development board. MQ135 is the gas sensor , it can detect the gases like Ammonia (NH3), Sulphur (S), Benzene (C6H6), CO2 etc. It is used to monitor the quality of the air. LCD display 16x2 is used to display the numerical value of the quality of air. Arduino IDE is used for writing the program.

4.3 ACTIVITY LOG FOR THE THIRD WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 12.12.2022	System design/architecture/framework	Circuit Designing	
Day – 2 13.12.2022	Design of Hardware/Software modules	Circuit Designing and Programming	
Day – 3 14.12.2022	Design of Hardware/Software modules	Circuit Designing and Programming	
Day – 4 15.12.2022	Design of Hardware/Software modules	Circuit Designing and Programming	
Day – 5 16.12.2022	Methodology (detailed description of the working of the project)	Reporting the information	
Day –6 17.12.2022	Methodology (detailed description of the working of the project)	Reporting the information	

WEEKLY REPORT

WEEK – 3 (from 12/12/2022 to 17/12/2022)

Objective of the Activity Done: System Design
Detailed Report: Node Mcu is used to control the flow of information between the hardware components and it supplies the power to the remaining componets. Analog signal from the MQ135 gas sensor is given to analog input of the Node Mcu .Some led light are used to indicate the present state of the pollution. A buzzer is connected if the pollution level is increased at harmful phase to alert people. Program code is uploaded into the nodemcu to set the conditions of the components .

4.4 ACTIVITY LOG FOR THE FOURTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 19.12.2022	Implementation of hardware/ software	Technical Skills	
Day – 2 20.12.2022	Implementation of hardware/ software	Technical Skills	
Day – 3 21.12.2022	Implementation of hardware/ software	Technical Skills	
Day – 4 22.12.2022	Implementation of hardware/ software	Technical Skills	
Day – 5 23.12.2022	Implementation of hardware/ software	Technical Skills	
Day –6 24.12.2022	Implementation of hardware/ software	Technical Skills	

WEEKLY REPORT

WEEK – 4 (from 19/12/2022 to 24/12/2022)

Objective of the Activity Done: System Implementation
Detailed Report: when NodeMcu is connect to a power supply it activates the gas sensor. The MQ135 sensor starts sensing the gases in the air and send the analog signal to the analog input of the Node Mcu . Node Mcu is programmed to send the information to the LCD screen to display the digitalized measures of the Analog signal from MQ135 sensor which are the level of the gases present in the air i.e, Air Quality. Based on the conditions the corresponding led's and buzzer are activated. If the Air quality is normal then a green led light will glow which indicates that the gas level are under normal condition. If the Air quality is medium then an orange led light will starts to glow which indicate that the gas levels are increasing and if the Red led light glow then it indicates that the air quality is at dangerous level and a alarm is activated.

4.5 ACTIVITY LOG FOR THE FIFTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 26.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	
Day – 2 27.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	
Day – 3 28.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	
Day – 4 29.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	
Day – 5 30.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	
Day –6 31.12.2022	Testing and validation of project results/reports	Identifying errors and adding corrections	

WEEKLY REPORT

WEEK – 5 (from 26/12/2022 to 31/12/2022)

Objective of the Activity Done: Results testing and validation
Detailed Report: The MQ135 sensor senses the gas molecules in the atmosphere and sends the analog signals to node mcu and the node mcu calculate its signals in terms of Parts Per Million (PPM) . The normal and average reading is between 300 to 500 ppm and if the reading crosses 1000 ppm it considered to be dangerous. But results might vary a bit based on the humidity and temperature.

4.6 ACTIVITY LOG FOR THE SIXTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day – 1 16.01.2023	Preparation of the project report	Organization and Presentation	
Day – 2 17.01.2023	Preparation of the project report	Organization and Presentation	
Day – 3 18.01.2023	Preparation of the project report	Organization and Presentation	
Day – 4 19.01.2023	Preparation of the project report	Organization and Presentation	
Day – 5 20.01.2023	Preparation of the project report	Organization and Presentation	
Day –6 21.01.2023	Preparation of the project report	Organization and Presentation	

WEEKLY REPORT

WEEK – 6 (from 16/01/2023 to 21/01/2023)

Objective of the Activity Done: Document preparation
Detailed Report: ITI road is a public road where several hundred of vehicles are passing through it, its surrounding area contains schools , colleges and hospitals . Information is gathered from the local people, students in nearby school and colleges and from doctors and patients from the Ramesh hospital. All information gathered from people in the locality and from observations and surveys are documented in the report and details about the mini project "Air Quality Monitoring System " is reported and the activities and programs done and weekly reports are documented .

CHAPTER 5: OUTCOMES DESCRIPTION

Details of the Socio-Economic Survey of the Village/Habitation Attach the questionnaire prepared for the survey.

Q. How far are you satisfied with the maintenance of the ITI Road?

Q. Do you find any frequent disturbance from this area?

Q. How do you feel about the cleanliness of the area?

Q. How does the Traffic affect your journey in ITI road?

Q. Do you think any mandatory changes required to the road?

Q. Does the change in weather causes any troubles ?

Q. At what times it is difficult to travel in the road?

Q. Does the infrastructure is enough or do you wish it to improve?

Q. Are the cleaning and maintaining works done frequently ?

Q. Do you have any complaints regarding the ITI road?

Describe the problems you have identified in the community

Parking slots and area are unorganized and vehicles are parked even in non-parking areas.

Traffic is less in the times of late mornings to early evenings but later on wards the traffic increases rapidly, it causes lot of time waste and creates noise and air pollution.

Since the colleges and school are started from the morning its incoming mass of students also causing some extent of traffic.

In some places of the ITI road the dividers are not set properly which causes people to cross roads in a risky way.

The common resources are not available in the middle of the road .

The name of the streets and considerable areas are not labelled clearly which causes the confusion to find the required address.

Short-term and long-term action plan for possible solutions for the problems identified and that could be recommended to the concerned authorities for implementation.

Some clear and organized area or places are needed to be established to maintain proper parking methods. And a strict observation is needed to avoid the parking in non-parking areas other wise it might cause internal traffic jam in middle of the road.

The street names and area names should be labelled at the entrances of the streets and areas. So that it will be easy to locate the required address,

It concerned authorities can create a area map technology to help new visitors to find their required way.

Report of the mini-project work done in the related subject w.r.t the habitation/village.

A mini-project work in the related subject w.r.t the habitation/village. (For ex., a student of Botany may do a project on Organic Farming or Horticulture or usage of biofertilizers or biopesticides or effect of the inorganic pesticides, etc. A student of Zoology may do a project on Aquaculture practices or animal husbandry or poultry or health and hygiene or Blood group analysis or survey on the Hypertension or survey on the prevalence of diabetes, etc**.**

The Report shall be limited to 8-10 pages.

An IoT Based Air Quality Monitoring System in which we will monitor the Air Quality and will trigger a alarm when the air quality goes down beyond a certain level, means when there are sufficient amount of harmful gases are present in the air like CO2, smoke, alcohol, benzene and NH3. It will show the air quality in PPM on the so that we can monitor it very easily.

we have used MQ135 sensor as the air quality sensor which is the best choice for monitoring Air Quality as it can detects most harmful gases and can measure their amount accurately.

First of all we will connect the ESP8266 Node Mcu. ESP8266 runs on 3.3V and if you will give it 5V then it won't work properly and it may get damage.

ESP8266 Wi-Fi module gives your projects access to Wi-Fi or internet. It is a very cheap device and make your projects very powerful. It can communicate with any microcontroller and it is the most leading devices in the IOT platform.

Learn more about using ESP8266 with Arduino here.

Then we will connect the MQ135 sensor with the Node Mcu. Connect the VCC and the ground pin of the sensor to the Vin and ground of the Node Mcu and the Analog pin of sensor to the A0 of the Node Mcu.

CONNECTIONS:

1.Mq135 sensor's A0 pin is connected to A0 pin of NodeMcu.

2.Mq135 sensor's ground pin is connected to NodeMcu's ground pin.

3.Mq135 sensor's Vcc pin is connected to Vin of NodeMcu.

4.LCD display is connected to I2C module.

5.I2C module's Vcc pin is connected to Vin of NodeMcu

6.I2C module's Ground pin is connected to ground pin of NodeMcu.

7.I2C module's SDA pin and SCL pins are connected to D2 and D1 pins of NodeMcu respectively.

8.Three leds are connected to the D5,D6,D7 pins of NodeMcu respectively along with resistors.

9.Buzzer is connected to D8 pin of NodeMcu.

WORKING EXPLANATION:

The MQ135 sensor can sense NH3, NOx, alcohol, Benzene, smoke, CO2 and some other gases, so it is perfect gas sensor for our Air Quality Monitoring Project. When we will connect it to Node Mcu then it will sense the gases, and we will get the Pollution level in PPM (parts per million). MQ135 gas sensor gives the output in form of voltage levels and we need to convert it into PPM. So forconverting the output in PPM, here we have used a library for MQ135 sensor, it is explained in detail in “Code Explanation” section below.

Sensor was giving us value of 90 when there was no gas near it and the safe level of

air quality is 350 PPM and it should not exceed 1000 PPM. When it exceeds the limit of 1000 PPM, then it starts cause Headaches, sleepiness and stagnant, stale, stuffy air and if exceeds beyond 2000 PPM then it can cause increased heart rate and many other diseases.

When the value will be less than 1000 PPM, then the LCD will display “Fresh Air”. Whenever the value will increase 1000 PPM, then the buzzer will start beeping and the LCD and webpage will display “Danger”. If it will increase 2000 then the buzzer will keep beeping and the LCD and webpage will display “Danger! Move to fresh Air”.

OBJECTIVES:

To combine advanced detection technologies to produce an air quality sensing system with advanced capabilities to provide low cost comprehensive monitoring.

To display the sensed data in user friendly format in LCD display panel.

REQUIREMENTS

HARDWARE REQUIREMENTS

1.NodeMcu.

2.MQ135 gas sensor.

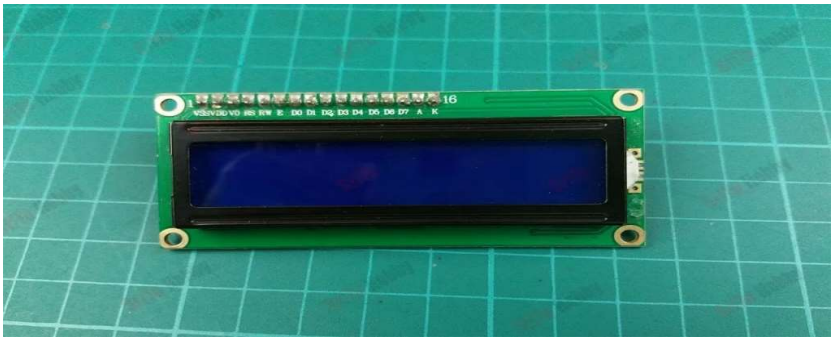
3. LCD display (16x2) with I2C module

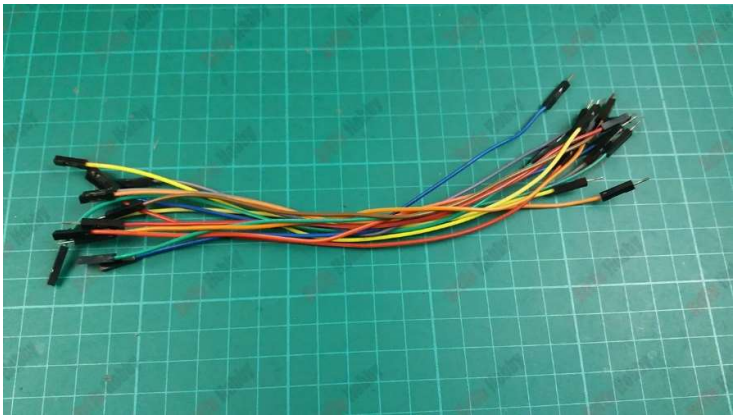
4.Buzzer.

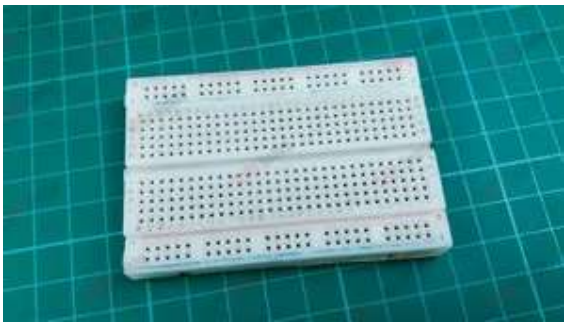
5.Leds(red,blue,green)

6.Resistors

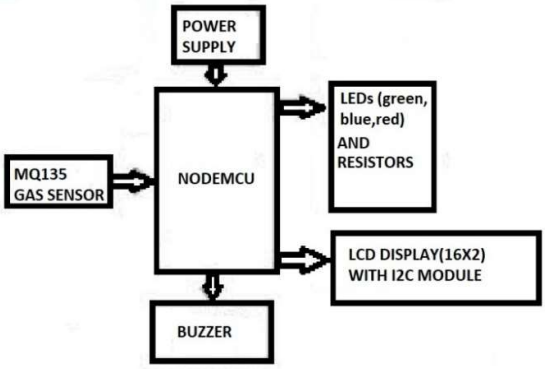
7.some jumping wires3.





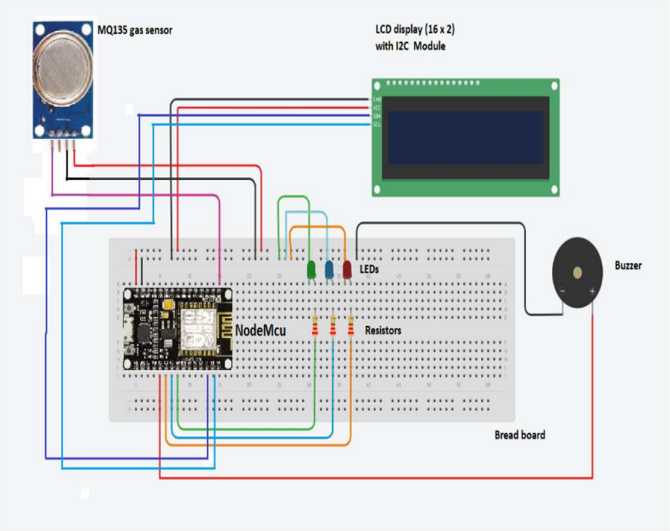


System Design (Block Diagram)



MPLEMENTATION:

CIRCUIT DIAGRAM



CODE MODULES:

```
#include <Wire.h>

#include <LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(0x27,16,2);

int led1=D5;

int led2=D6;

int led3=D7;

int buzzer=D8;
i
nt mqsensor=A0;

void setup() {

Serial.begin(9600);

pinMode(led1,OUTPUT);

pinMode(led2,OUTPUT);

pinMode(led3,OUTPUT);

pinMode(buzzer,OUTPUT);

pinMode(mqsensor,INPUT);

lcd.init();

lcd.clear();

lcd.backlight();

lcd.setDelay(0,0);

lcd.print("hello");
}
void loop(){ // int sensor=100;

int sensor=analogRead(mqsensor);

if(sensor<=300)
{
```

```
digitalWrite(led1,1);
digitalWrite(led2,0);
digitalWrite(led3,0);
Serial.println(sensor);
lcd.setCursor(0,0);
lcd.print("AirPollution:");
lcd.setCursor(13,0);
lcd.print(sensor);
lcd.setCursor(0,1);
digitalWrite(buzzer,0);
lcd.print("Condition:fresh");
}
else if(sensor<=500 && sensor>=300){
digitalWrite(led2,1);
digitalWrite(led1,0);
digitalWrite(led3,0);
Serial.println(sensor);
lcd.setCursor(0,0);
lcd.print("AirPollutio:");lcd.setCursor(13,0);
lcd.print(sensor);
lcd.setCursor(0,1);
lcd.print("Condition:danger");
}delay(1000);
}
```

EXPERIMENTAL RESULTS:

CONCLUSION AND LIMITATIONS

CONCLUSION:

This research proposed a smart Air Quality monitoring system that constantly keeps track of air quality in an area and displays the air quality measured on an LCD screen. Its turns on a green light when the atmosphere is fresh. Other wise its turns on a blue light when some considerable amount of pollutants are present in atmosphere. If the

pollution level is high then the device turns on red light which indicates that it is danger.

LIMITATIONS :

The device lacks a callibration technique . Its shows readings that are a bit more or less than the actual readings.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSION

Road are always a public property, they are the connection to the places of our loved ones. In modern days without roads we cant go anywhere, and obviously without vehicles we cant use our roads effectively. Since vehicles and roads are connected we cant separate them. Nowadays every vehicle runs with the help of petrol, diesel and other fuels, because of which harmful gases are released into atmosphere through vehicles. These harmful gases that are released creates air pollution and the quality of quality has drastically decreased. Air pollution causes the different diseases to human body, So it is a necessity for us to reduce this air pollution. For that matter we should be atleast be able to monitor the Air pollution.

With the help of a IoT projects we can measures the quality of air and create the required functions to take immediate actions. This is one of the ways in which we can monitor the air quality and take effective methods to reduce the air pollution.

Student Self-Evaluation for the Community Service Project

Student Name : T. Pallavi Reddy

Registration No: 21501A05H3

Period of CSP: From:28-11-2022 to 21-01-2023

Date of Evaluation: 30-01-2023

Please rate your performance in the following areas:

Rating Scale: **Letter grade of CGPA calculation to be provided**

1	Oral communication	1	2	3	4	5 ✓
2	Written communication	1	2	3	4 ✓	5
3	Proactiveness	1	2	3	4	5 ✓
4	Interaction ability with community	1	2	3	4	5 ✓
5	Positive Attitude	1	2	3	4 ✓	5
6	Self-confidence	1	2	3	4 ✓	5
7	Ability to learn	1	2	3	4	5 ✓
8	Work Plan and organization	1	2	3	4	5 ✓
9	Professionalism	1	2	3	4 ✓	5
10	Creativity	1	2	3	4	5 ✓
11	Quality of work done	1	2	3	4 ✓	5
12	Time Management	1	2	3	4	5 ✓
13	Understanding the Community	1	2	3	4	5 ✓
14	Achievement of Desired Outcomes	1	2	3	4	5 ✓
15	**OVERALL PERFORMANCE**	**1**	**2**	**3**	**4**	**5** ✓

T. Pallavi

Date: 28/01/2023 **Signature of the Student**

Evaluation by the Person in-charge in the Community / Habitation

Student Name: T. Pallavi Reddy

Registration No: 21501A05H3

Period of CSP: from 28/11/2022 to 21/01/2023

Date of Evaluation: 30/01/2023

Name of the Person in-charge:Dr. Ravuri Daniel
Address with mobile number: 9133438924

Please rate the student's performance in the following areas:

Please note that your evaluation shall be done independent of the Student's self-evaluation.

Rating Scale: 1 is lowest and 5 is highest rank

1	Oral communication	1	2	3	4	5
2	Written communication	1	2	3	4	5
3	Proactiveness	1	2	3	4	5
4	Interaction ability with community	1	2	3	4	5
5	Positive Attitude	1	2	3	4	5
6	Self-confidence	1	2	3	4	5
7	Ability to learn	1	2	3	4	5
8	Work Plan and organization	1	2	3	4	5
9	Professionalism	1	2	3	4	5
10	Creativity	1	2	3	4	5
11	Quality of work done	1	2	3	4	5
12	Time Management	1	2	3	4	5
13	Understanding the Community	1	2	3	4	5
14	Achievement of Desired Outcomes	1	2	3	4	5
15	**OVERALL PERFORMANCE**	1	2	3	4	5

Date: 28/01/2023

Signature of the Supervisor