A Presentation On

Air Quality Monitoring System

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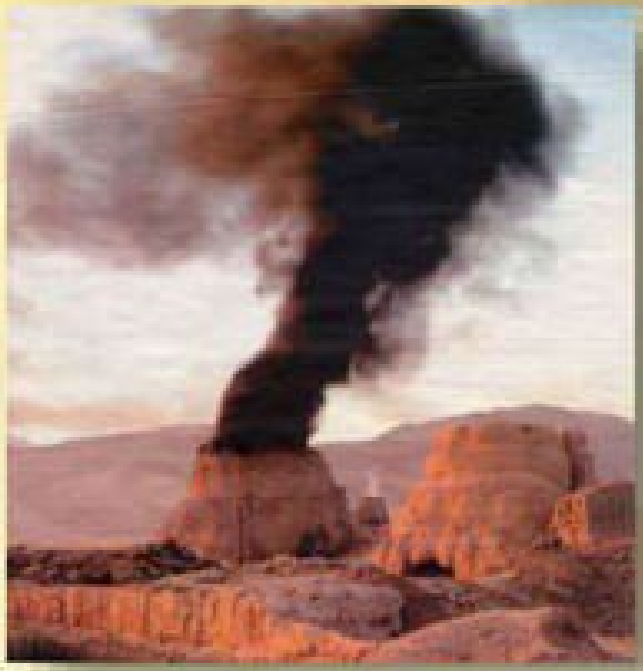
CONTENTS

INTRODUCTION

- Pollution
- Traffic
- Industries
- Increase in vehicles
- Lack of Data
- Health Problems



LITERATURE SURVEY

Air Quality Monitoring system at National Lab

Indoor air quality checking devices in US

Aim and Objectives

- To create a tool which will monitor the quality of air of our environment.
- Content of different gases present in air or area around us.
- Display the data on LCD.

PROBLEM STATEMENT

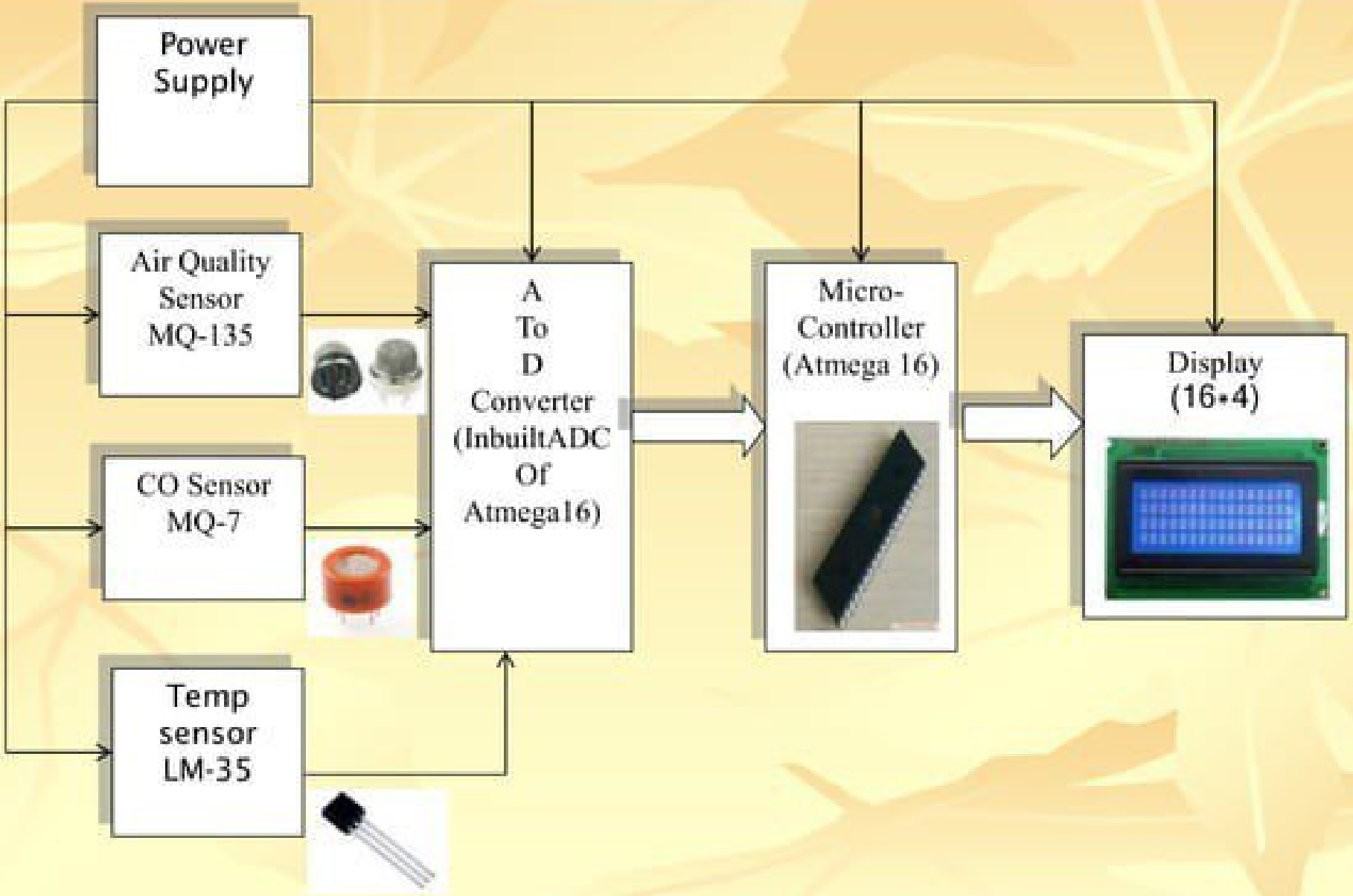
Design a tool which will-

1)Sense quality of air and display it in the form of percentage.

2)Sense how much Carbon Mono-oxide(CO) is present in air and display in the form of percentage.

3)Sense the temperature and display it in degree celcius

PROPOSED BLOCK DIAGRAM



PRINCIPLE OF WORKING

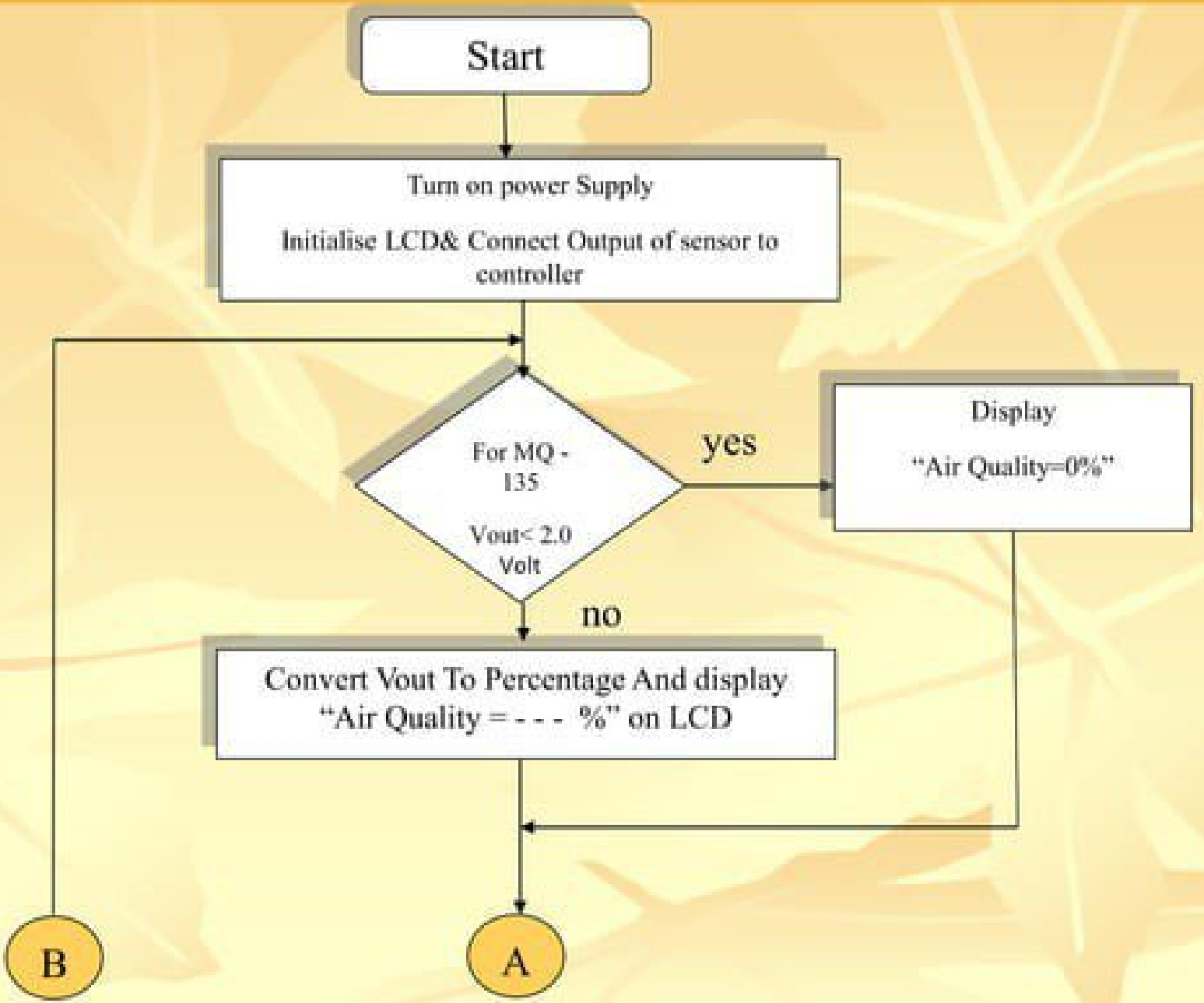
- Project's basic principle of working is the sensing of data from the sensor .
- Convert the analog (voltage) data into digital form.
- Process the digital data and display it on LCD.

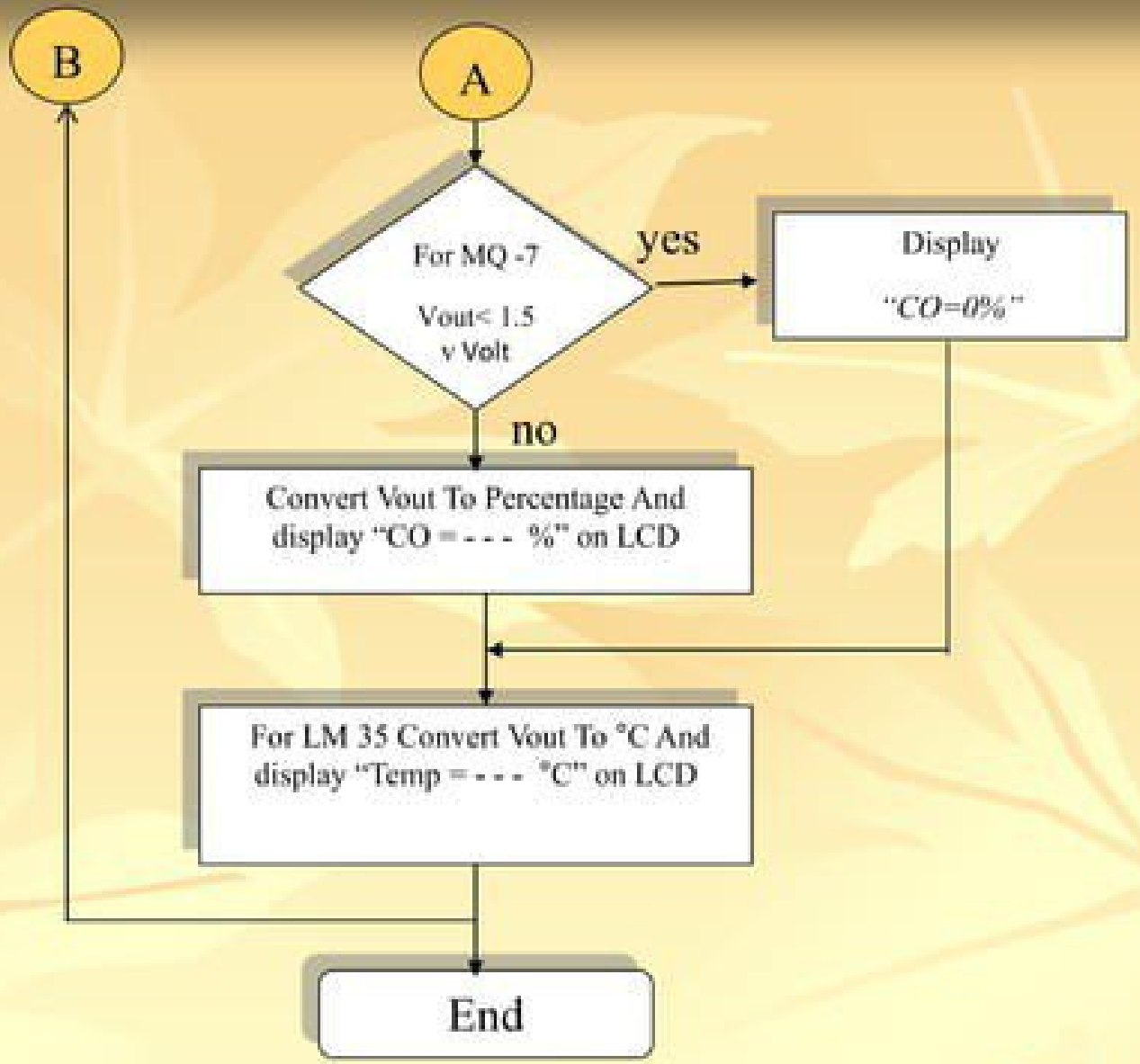
MQ 135

MQ 7

LM 35

FLOW CHART


Start
Turn on power Supply
Initialise LCD& Connect Output of sensor to controller
For MQ - 135
Vout< 2.0 Volt
yes
Display
"Air Quality=0%"
no
Convert Vout To Percentage And display "Air Quality = - - - %" on LCD
B
A


B
A
For MQ -7
Vout< 1.5
v Volt
yes
Display
"CO=0%"
no
Convert Vout To Percentage And
display "CO = - - - %" on LCD
For LM 35 Convert Vout To °C And
display "Temp = - - - °C" on LCD
End

RESULTS

MQ 135

Output Voltage	Air Quality (%)
1.58	0
1.65	0
1.68	0
1.73	0
1.79	0
1.92	0
1.96	0
2.00	0
2.05	1.66
2.36	12
2.79	26.33
3.06	35.33
3.14	48
3.56	52
3.84	61.56
3.96	65.33
4.10	70
4.26	75.33
4.38	79.33

In Case of Sensor MQ-135 If Vout< 2 V then 0 % Pollution is present i.e< 10 ppm then air is of good quality

As a Pollution increase then voltage is increase 1 % to 55 % is air having pollution between 10 ppm to 16 ppm

If Air Quality is > 55 % then More amount of pollution present in air.Not good for human health

MQ 7

Output Voltage	Air Quality(%)
0.78	0
0.85	0
0.96	0
1.05	0
1.17	0
1.43	0
1.65	4.28
1.75	7.142
1.86	10.28
1.99	13.61
2.16	18.85
2.35	24.28
2.55	30
2.76	36
2.91	40.28
3.09	45.42
3.42	54.85
3.56	58.85
4.12	74.85

In Case of Sensor MQ-7
If Vout< 1.5 V then 0 % CO is present i.e<8 ppm then air is of good air

As a CO increase then voltage is increase 1 % to 36 % is air having pollution between 8 ppm to 25 ppm

If CO is> 36 % then More amount of pollution present in air.Not good for human health

ADVANTAGES

- Sensors are easily available .
- Detecting a wide range of gases, including NH3, NOx, alcohol, benzene, smoke and CO2,Co etc
- Simple, compact & Easy to handle .
- Sensors have long life time & less cost.
- Simple Drive circuit.
- System is Real time.
- Operating voltage : 5 volt,-20°C to +50°C
- Quality of air can be checked indoor as well as outdoor.
- Visual output.
- Continous update of change in percentage of quality.

LIMITATIONS

- Only 3 sensors are used.
- Humidity should be less than 95%.
- Accurate measure of contaminating gases cannot be detected in ppm.

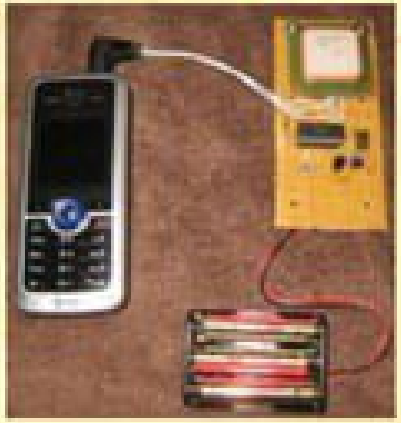
APPLICATIONS

- Roadside pollution Monitoring .
- Industrial Perimeter Monitoring.
- Site selection for reference monitoring stations.
- Indoor Air Quality Monitoring.
- To make this data available to the common man.

FUTURE SCOPE

In future the project can be upgraded in more ways than one.

- Interface more number of sensors to know detail content of all gases present in air.
- Design Webpage and upload data on webpage with date and time.
- Interface SD Card to store data.
- Interface GPS module to monitor the pollution at exact location and upload on the webpage for the netizens.



Thank You