AIR QUALITY MONITORING SYSTEM

Phase 4: Development Part 2

ABSTRACT

- When air get mixed with harmful gases and substances it is called air pollution

- The major pollutants of air are gases such as ammonia,corbon monoxide,sulpur dioxide, nitrous oxides, methane etc.

- The sources of pollutants are industrial emission, hazardous emissions form vechicles,burning of fossil fuels etc.

- Pollutant air can causes severe health effects such as heart disease, lungs cancer, respiratory infections etc.

INTRODUCTION

▶ This project is aimed to develop an IOT based application to deal with air pollution

▶ With the help of sensors such as MQ7 various air parameters are sensed and transmitted

▶ ESP32 development board plays important role in this project

▶ The prototype connects with Wi-Fi and uploads all air parameters to centralized server

EXISTING SYSTEM

- ▶ To collect parameters many electro mechanical devices are used

- ▶ These devices are heavy and not economical to install at many places

- ▶ Periodical collection of data is difficult

- ▶ Still manual intervention is required for collecting and feeding data to central servers

PROPOSED SYSTEM

▶ Since its IOT based product all functional units are connected in a network

▶ All things such as sensors base station,cetralized server work together by means of communication over network

▶ Data collected from sensors gets uploaded to cloud servers instantly

▶ For authorities such as pollution control board, data is easily available

▶ They can draw conclusions and take actions instantly

HARDWARE REQUIREMENTS

- Processor   -i3 or Higher

- RAM   - 2GB or Higher

- Hard disk   - 500 GB

- MQ7 sensors

- ESP 32 Kit

- Bread board

- Jumper wires.

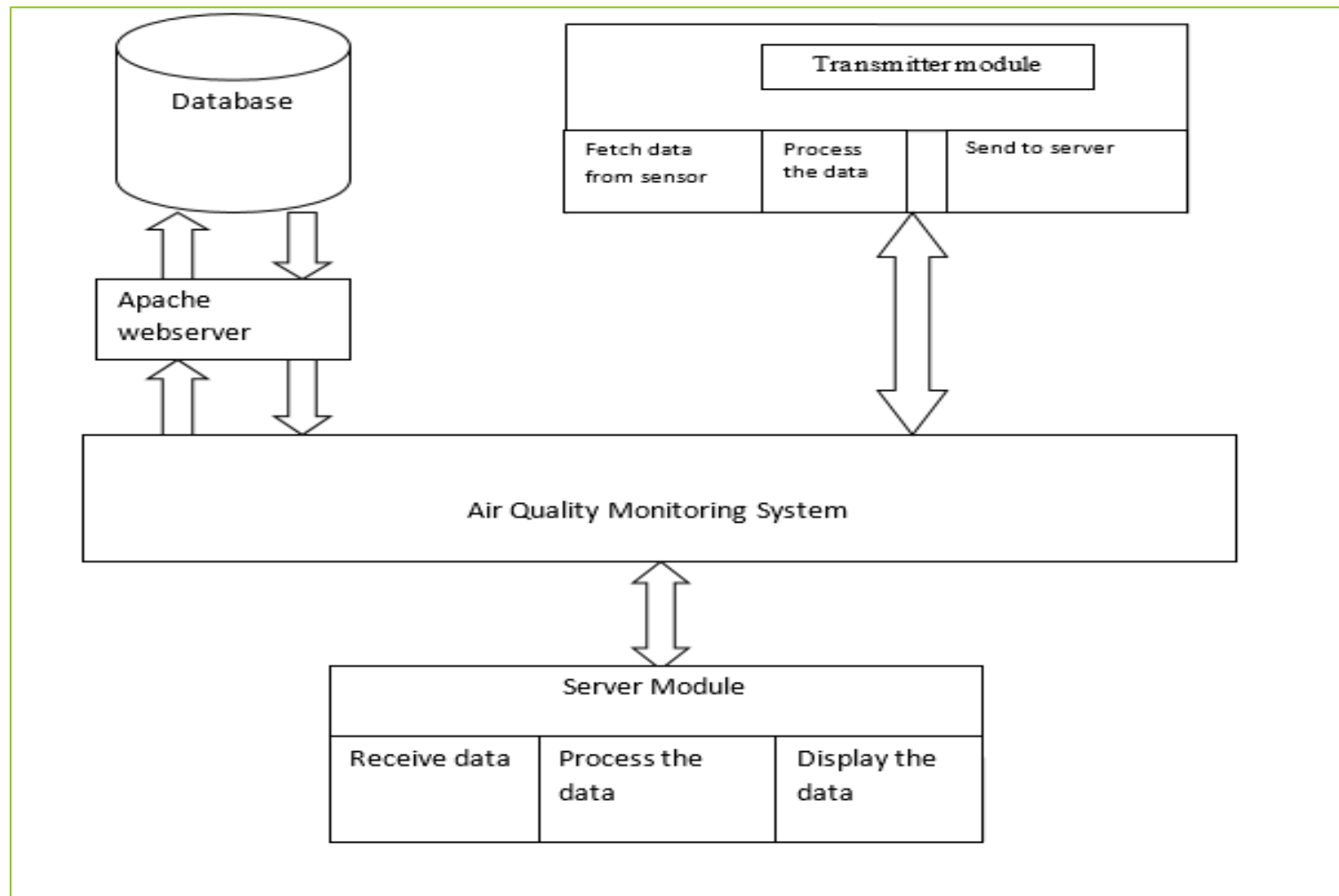# SOFTWARE REQUIREMENTS

- Front end   - Bootstrap Framework

- Programming Language   - C,JAVA

- Operating System   - Windows 7 or Any Compatible

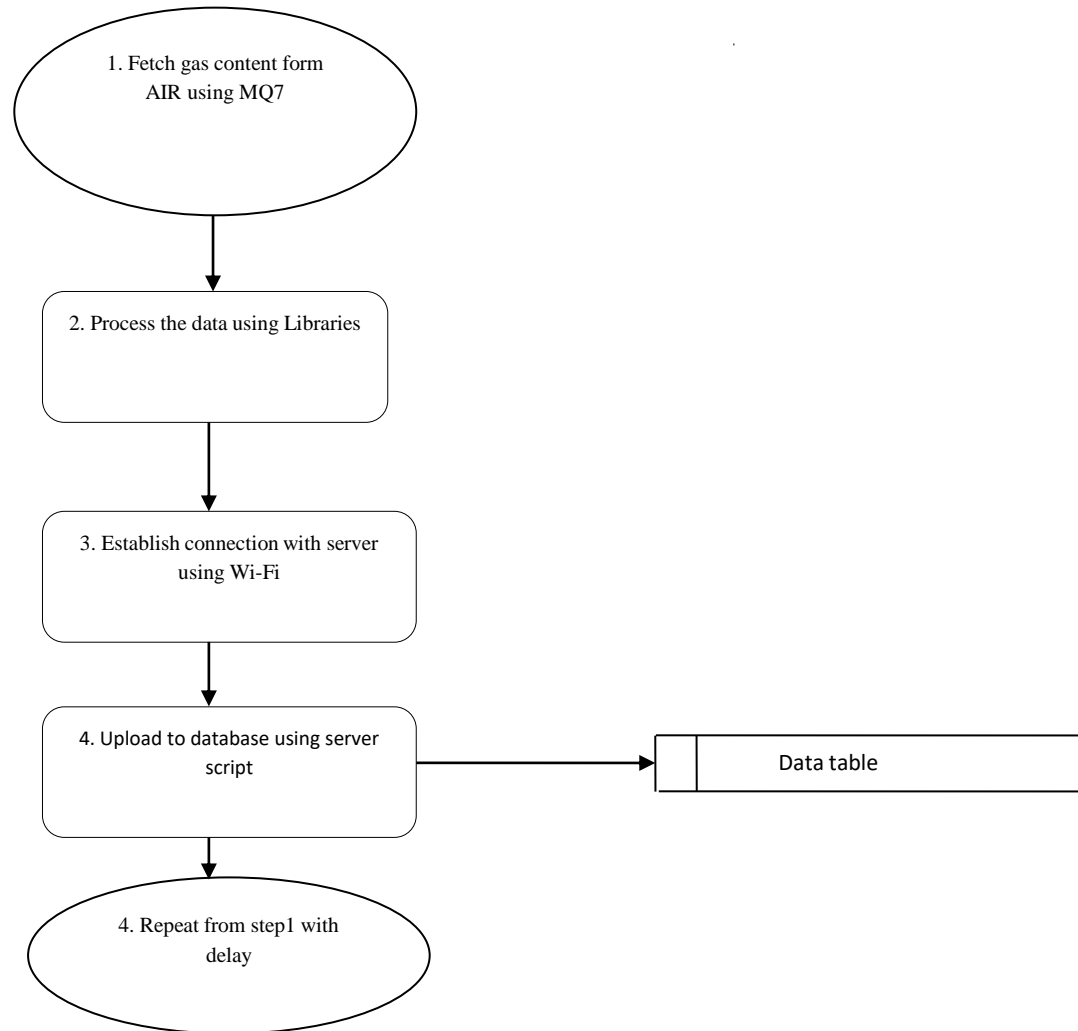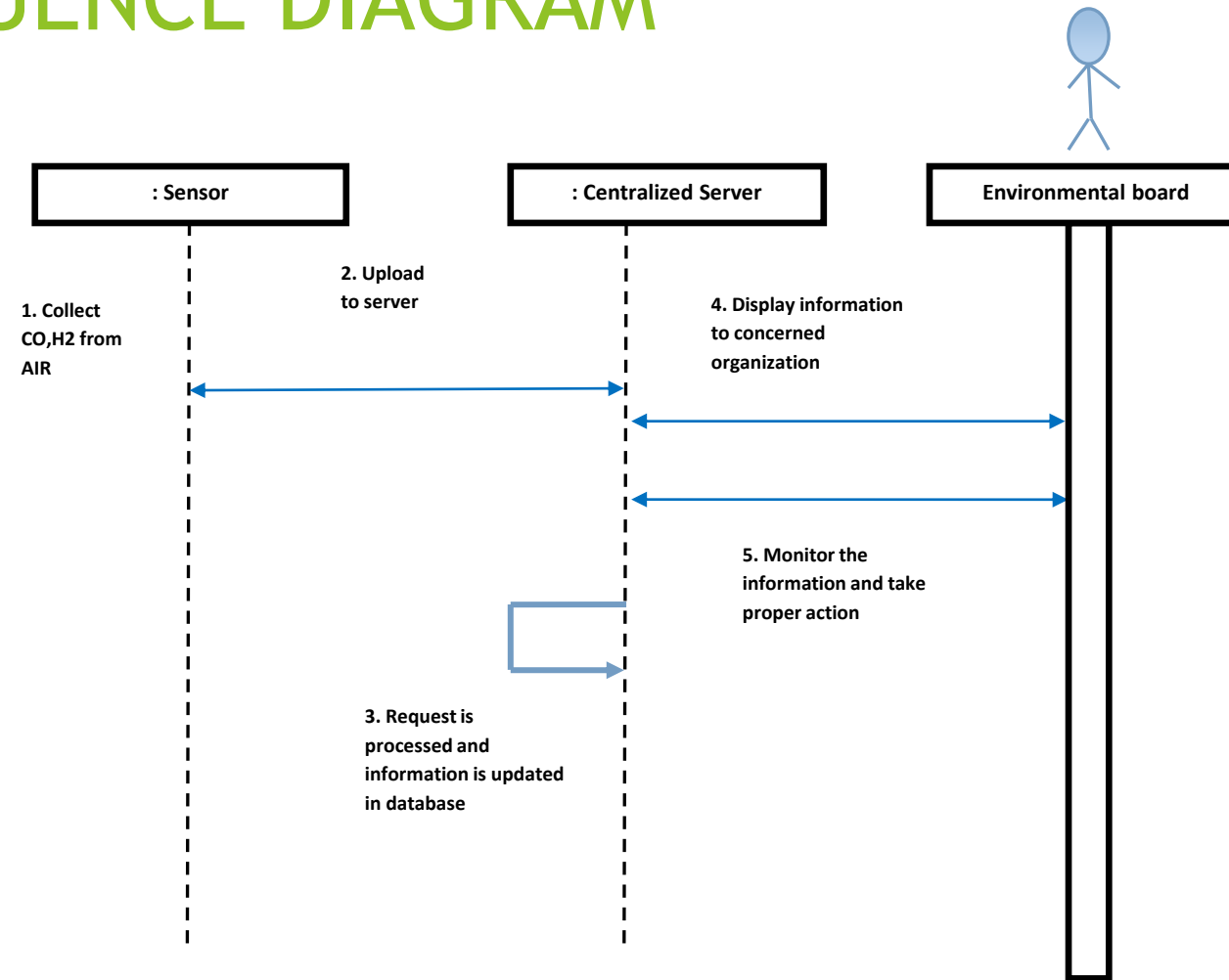- Editor   - Notepad++

- IDE   - Arduino, Android 2.3.2
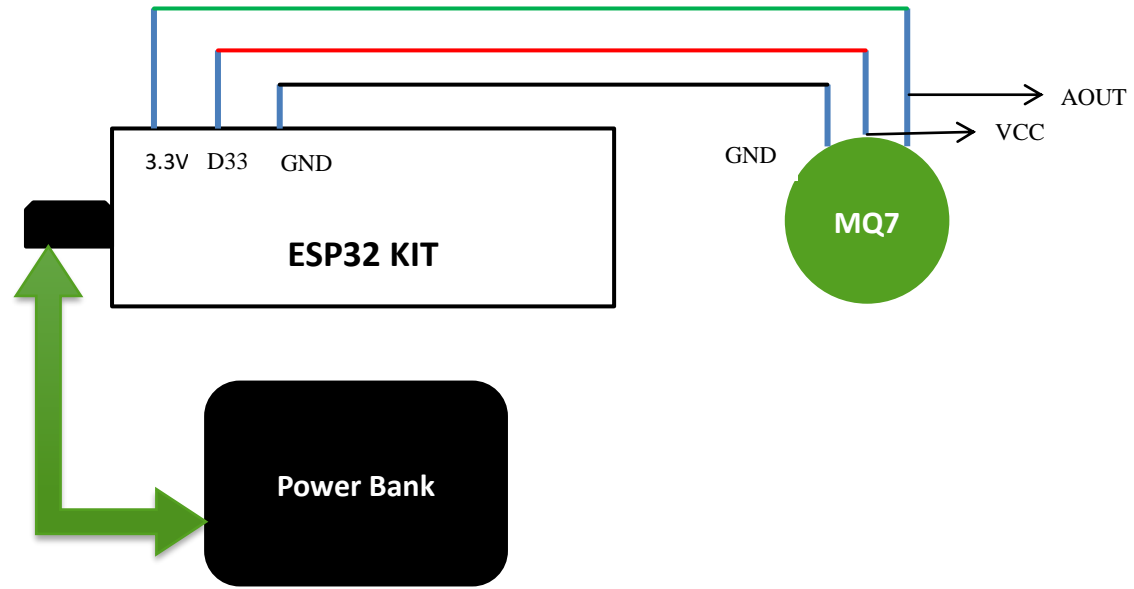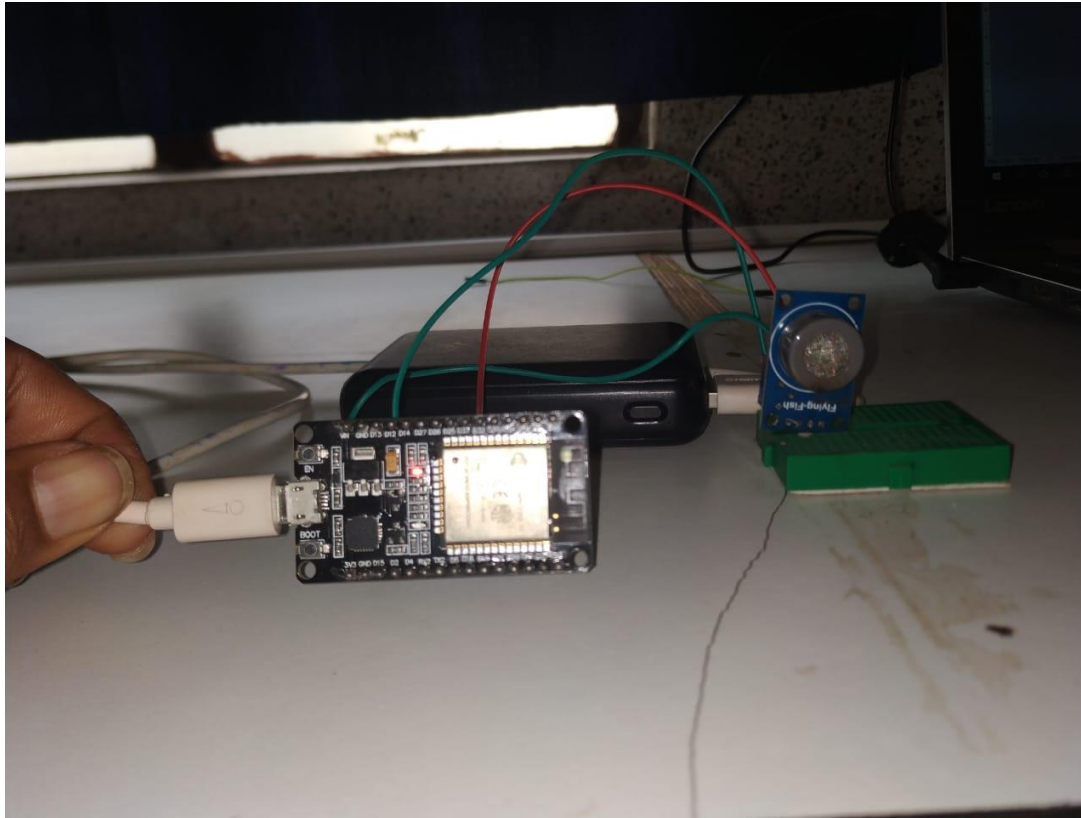
SYSTEM DESIGN

ARCHITECTURE DIAGRAM
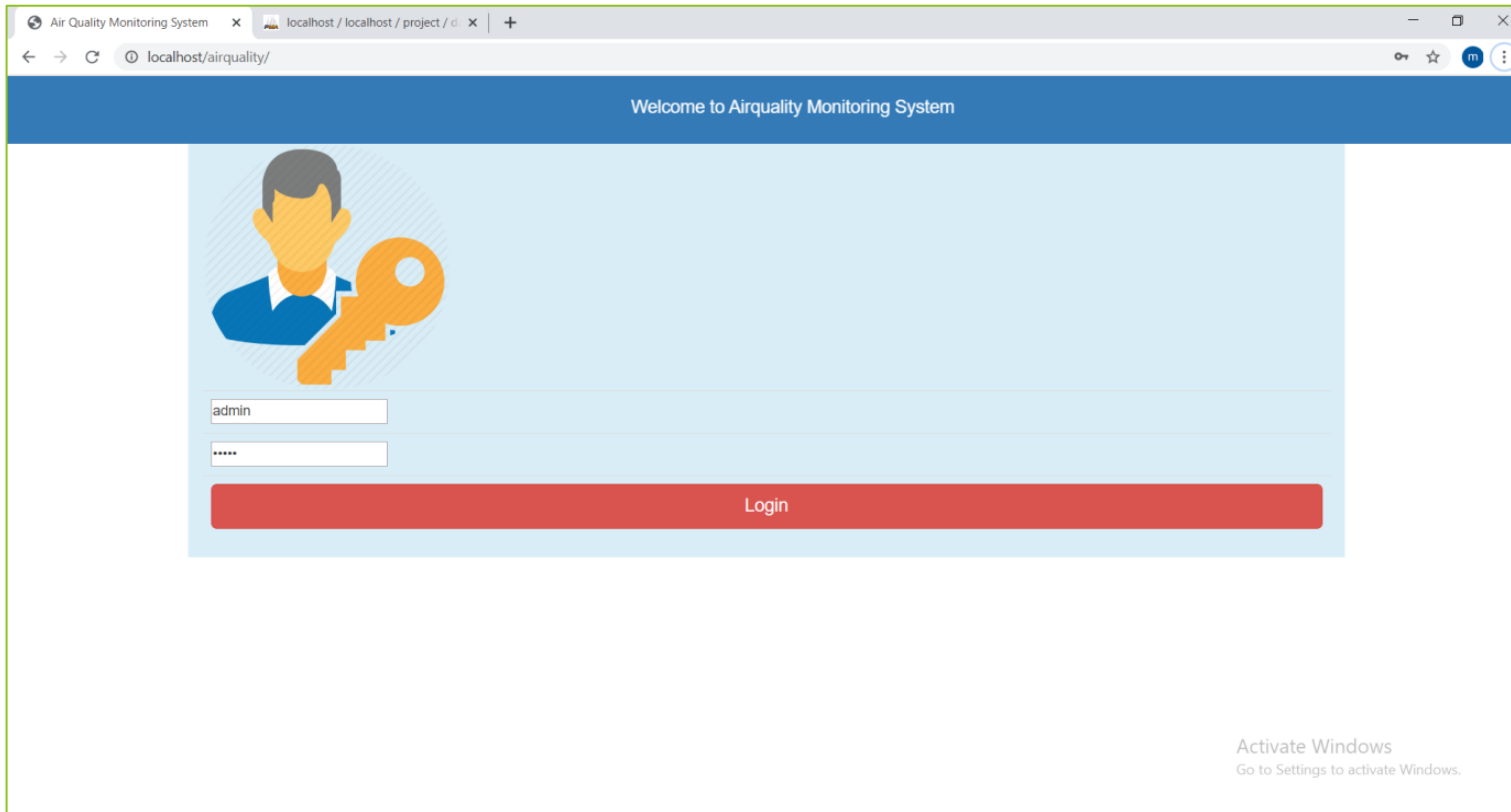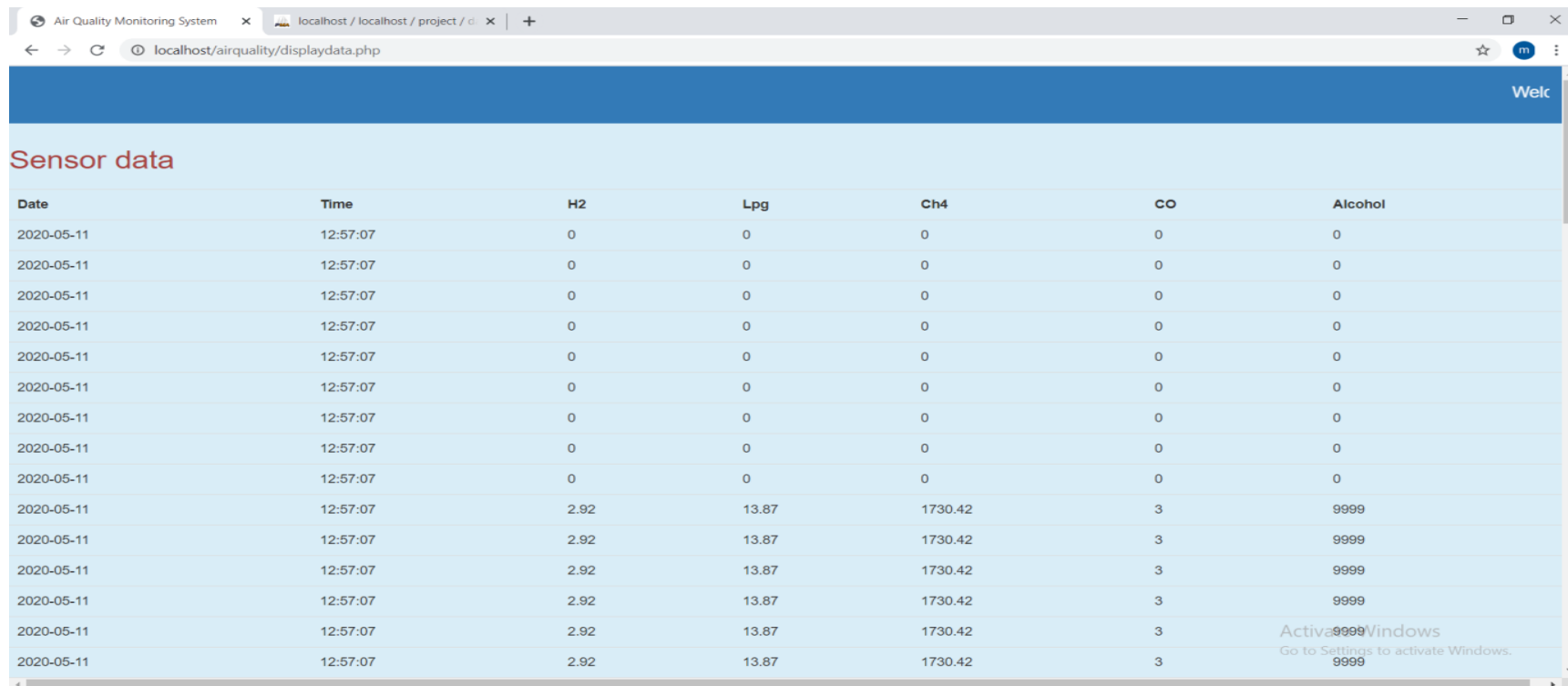
DATA FLOW DIAGRAM

SEQUENCE DIAGRAM

SCHEMATIC DIAGRAM

RESULTS

Login page

Sensor data collected at server

CONCLUSION

▶ Monitoring the environmental parameters especially with respect air plays very important role to ensure healthy environment for living beings. We have seen various hazards being caused at Delhi due to air pollution. There are many reasons for causing air pollution but knowing their concentration at various locations helps to take decisions on prevention measures.

▶ The proposed application works on the principle of IOT, data read from sensor are processed by the processor (ESP32) then uploaded to database, these data are analyzed and displayed to users, and user could fetch this information over phone or webserver and take proper action to prevent pollution.

FUTURE ENHACEMENTS

- It can be improved further by adding more sensors to existing system like dust paritcles sensors and etc

- 2. Interface GPS module to screen the contamination at precise area and transfer on the website page for the netizens.

THANK YOU