GREENHOUSE MONITORING AND CONTROLING SYSTEM

Dr.C.Kalai Selvan,
Professor, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

Dr.Dola Sanjay.S,
Professor & H.O.D, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

D.Siva kumari,
B. Tech Students, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

S.Dharani,
B. Tech Students, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

P.Sunil babu,
B. Tech Students, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

V.Akhil Kumar
B. Tech Students, Dept of ECE, NRI Institute of Technology, Visadala, Guntur, A.P, India

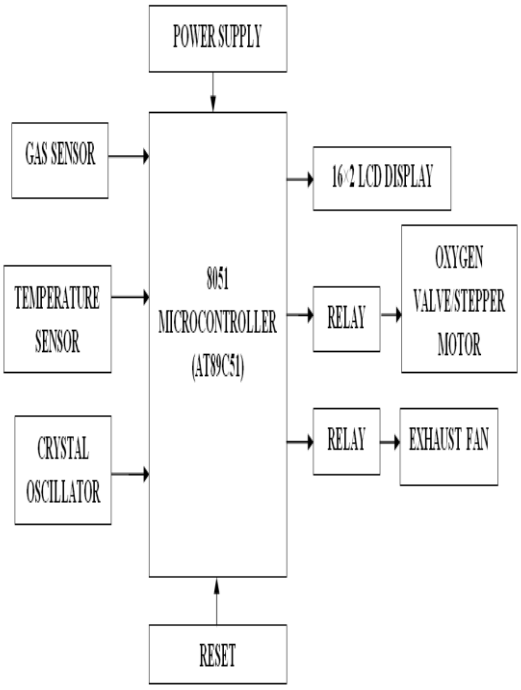
1.***Abstract***: *Greenhouse monitoring is a needed one for variable climate changes. Initiating from industrial controls and telecommunication, it is now being applied in environmental monitoring and agriculture. The existing system has the ability to yet lack the ability to control indoor humidity and other parameter. In this project IOT based green house environment monitoring system is implemented. This project is used to measure the various parameters like Temperature, Gas and light.*

Key world *8051 microcontroller.*

2.Introduction: We Live in a world where everything can be controlled and monitored automatically.But there are still few important fields where automation is needed like agriculture.Since farming is the primary occupation in our country. Green house forms an important part of agriculture which is use to control environmental condition for optimum production. Automation is the process for Green house controlled parameters automatically by replacing the human efforts.

3.Working Principle:A climate control system automates the greenhouse to reach the desired temperature as required by your crops' growing process. The system monitors and handles humidity, shading, fogging, and much more. This is accomplished by the way of real time sensors, that communicate wirelessly in the greenhouse, via mesh WiFi.

4.Block diagram



5.Hardware Requirements:

GAS SENSOR : It is a device which detects the presence or concentration of gases in the atmosphere.

TEMPERATURE SENSOR : A temperature sensor is a device used to measure temperature .This can be air temperature, liquid temperature or the temperature of solid matter.

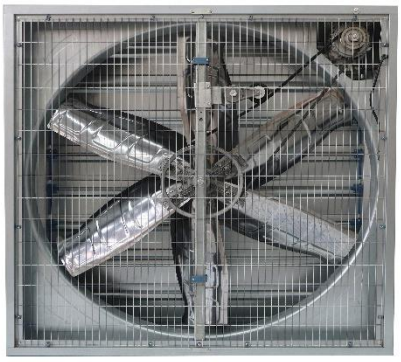
CRYSTAL OSCILLATOR : A crystal oscillator is an electric oscillator type circuit that uses a piezoelectric resonator, a crystal, as its frequency determining element.

POWER SUPPLY : It takers the AC from the wall outlet, converts it to unregulated DC.

16*2 LCD DISPLAY : It can display 16 characters per line and there are two such lines. These lcd has two registers, namely command and data

OXYGEN VALVE : It works by filtering and concentrating oxygen molecules from the ambient air to provide with 90% to 95% pure oxygen.

EXHAUST FANS : It pull doors, fumes, and moisture from an area of the home, venting them outdoor from removal.



6.Software Requirements:

Keil Software:
Keil software is to develop code of project.
Proteus software:
The Proteus is used to design the project.

7.Results:

8.Conclusion:

The proposed system has several advantages in term of fast delivery, zero data lose, low cost, flexibility, user friendliness and energy efficiency. This greenhouse monitoring system will create awareness, performing scientific studies and to forecast re mediation policies by the authorities to individuals and organization in controlling global warming.

9.References:

[1] D. F. Larios, J. Barbancho, G. Rodríguez, J. L. Sevillano, F. J. Molina, and C. León, "Energy efficient wireless sensor network communications based on computational intelligent data fusion for environmental monitoring," IET Common., vol. 6, no. 14, pp. 2189–2197, Sep. 2012.

[2] J.-Y. Kim, C.-H. Chu, and S.-M. Shin, "ISSAQ: An integrated sensing systems for real-time indoor air quality monitoring," IEEE Sensors J., vol. 14, no. 12, pp. 4230–4244, Dec. 2014.

[3] L. Zhang and F. Tian, "Performance study of multilayer perceptrons in a low-cost electronic nose," IEEE Trans. Instrum. Meas., vol. 63, no. 7, pp. 1670–1679, Jul. 2014.

[4] S. Sharma, V. N. Mishra, R. Dwivedi, and R. R. Das, "Quantification of individual gases/odors using dynamic responses of gas sensor array with ASM feature technique," IEEE Sensors J., vol. 14, no. 4, pp. 1006–1011, Apr. 2014.

[5] J. Wan, M. Chen, F. Xia, D. Li, and K. Zhou, "From machine-tomachine communications towards cyber-physical systems," Comput. Sci. Inf. Syst., vol. 10, no. 3, pp. 1105–1128, 2013.