

A REVIEW ON MICROCONTROLLER BASED AUTOMATION

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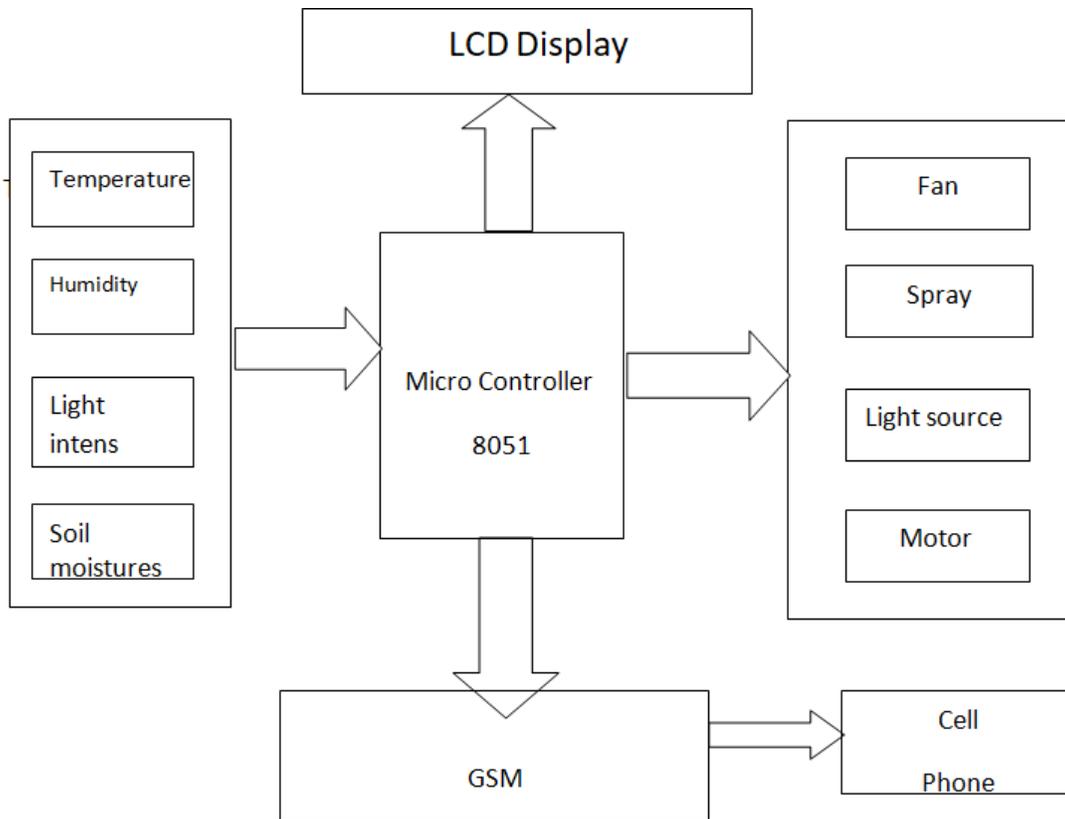
Abstract- Advancements have nearly reached all over, be it in the specialized fields or the horticultural fields. One of the predefined areas where this innovation has made extraordinary effect is Green House, as we call it. Present day advances are utilized to screen certain ecological condition which is an unquestionable requirement to guarantee ideal development of plants in green house, upgraded crop profitability alongside legitimate use of water and different assets. These conditions factors must be all around characterized and the information with respect to soil conditions, and climatic condition boundaries that influences the plant advancement, must be deliberately gathered through mechanized cycles. Doing so makes it conceivable to acquire enormous number of information at high recurrence with less number of human help included. Despite the fact that the PC and SMS-based frameworks are demonstrated appropriate to keep the client refreshes with the nursery status, various components make it not worth of ventures we make. These variables incorporate costly costs, cumbersome size, upkeep issues and futile to incompetent specialists. Furthermore, so we chose to give this a shot "Nursery Automation System | Automated Greenhouse" and make things work in a route appropriate for us with less measure of physical just as affordable speculation. The main focal point of this venture is to grow such a framework/gadget which is structure-wise a lot easier yet simple to introduce and less expensive. Hence, the task "Nursery Automation System | Automated Greenhouse" has utilized effectively accessible part like microcontroller as its main component that is utilized to screen and gather the shifting green house subtleties, for example, temperature chronicles, proportion of soil dampness and daylight, at various moments of time.

Index Terms- GSM, LCD, Relay.

I. INTRODUCTION

The framework underneath comprise of four information (Temperature, Humidity, light, Soil dampness sensor) are four yield (fan, water siphon, light, sprinkler) Micro regulator is the fundamental cerebrum for this framework since it controls the general framework in the green house. Temperature sensor used to distinguish the temperature in the green house. At the point when temperature sensor distinguishes the high temp, miniature regulator will impart the sign to the fan to stable the green house condition. At that point, when light sensor identifies on light, miniature regulator will impart the sign to light and light will be ON consequently. Water siphon is utilized to gracefully water to the sprinkle and ensure the sprinkle watered the plants in the green house. As we see in fig, the micro controller control circuit that will be connected to the soil sensor, humidity sensor, temp sensors and light sensor.

The micro controller receives the value from sensors and analysis and then compares it with the threshold value stored in the micro controller memory, based on this value the micro controller takes the appropriate procedures and also controls the output device based on these values; the micro controller sent the report by the GSM modem to the farmers phones.



1. Temperature
2. Humidity
3. Light Intensity
4. Soil Moisture

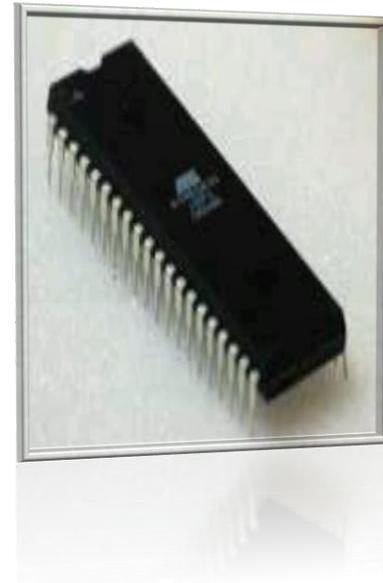
II.HARDWARE DISCRPTION

MICROCONROLLER (89C52)

In this system for the proper operation of circuit we are using the microcontroller 89C52. The microcontroller is required for giving the signal to the relay for opening or closing the contact, to LCD display for indication of result of parameter when sensor are sense. If this microcontroller is hanged ,then it will starts automatically. Therefore we use this microcontroller.

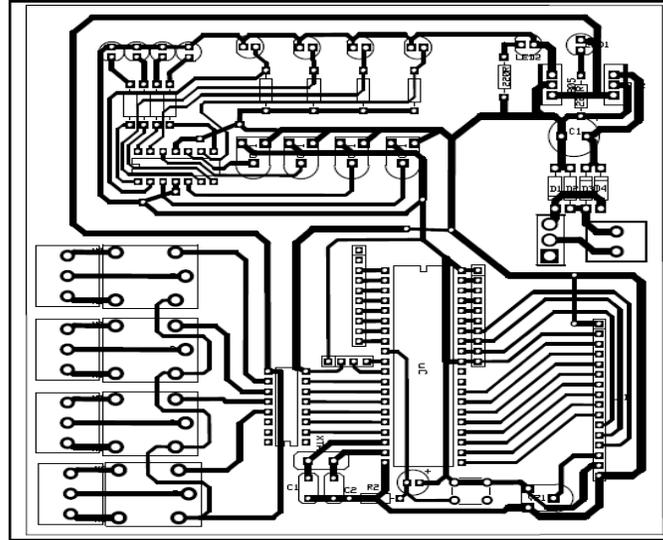
The AT89C52 is a CMOS 8-bit microcontroller is having the some advantages such as a low- power consumption, high-performance with 8Kbytes in-system programmable Flash memory. This microcontroller is made by using Atmel’s high-density non-volatile memory technology and is compatible with the industry standard 80C51 instruction set and pin out.

PDIP			
(T2) P1.0	1	40	VCC
(T2 EX) P1.1	2	39	P0.0 (AD0)
P1.2	3	38	P0.1 (AD1)
P1.3	4	37	P0.2 (AD2)
P1.4	5	36	P0.3 (AD3)
(MOSI) P1.5	6	35	P0.4 (AD4)
(MISO) P1.6	7	34	P0.5 (AD5)
(SCK) P1.7	8	33	P0.6 (AD6)
RST	9	32	P0.7 (AD7)
(RXD) P3.0	10	31	$\bar{E}A/VPP$
(TXD) P3.1	11	30	ALE/ \overline{PROG}
($\overline{INT0}$) P3.2	12	29	\overline{PSEN}
($\overline{INT1}$) P3.3	13	28	P2.7 (A15)
(T0) P3.4	14	27	P2.6 (A14)
(T1) P3.5	15	26	P2.5 (A13)
(\overline{WR}) P3.6	16	25	P2.4 (A12)
(\overline{RD}) P3.7	17	24	P2.3 (A11)
XTAL2	18	23	P2.2 (A10)
XTAL1	19	22	P2.1 (A9)
GND	20	21	P2.0 (A8)



This microcontroller is same as that of 80c51 microcontroller. The on-chip Flash allows the program memory to be reprogrammed in-system or by a conventional non-volatile memory programmer. By combining a versatile 8-bit CPU with in-system programmable Flash on a monolithic chip, the Atmel AT89C52 is a powerful microcontroller which provides a highly- flexible and cost-effective solution to many embedded control applications.

PCB LAYOUT



ADVANTAGES :

- 1) It has ability to monitor five different green house climate parameters,(temperature, relative humidity , light intensity, carbon dioxide and soil moisture).
- 2) The system does not need cable to run and has low power consumption.
It comprises embedded wireless sensor nodes that can be used to collect real time environmental data.
- 3) It allows communication between the controlling station and actuators that are located in different part of green house.The system are flexible & reliable.
- 4) The system is scalable -more measurement point can be added to system at only a fraction of the cost.

DISADVANTAGES:

1. Continue power supply needed.
2. Installation cost is higher.

III. CONCLUSION

In this paper automated greenhouse control is discussed with advantage of low cost of accuracy. The benefits that the fully automated green house control system bring to grower are many. Obviously, there will be the labour saving aspect but far more importantly, factor such as improved quality of product and information gathering can mean the difference between earning a profit or suffering substantial losses.

Green house prevent the plant for effect of climate; insects and so on which make great sense for agriculture production.

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