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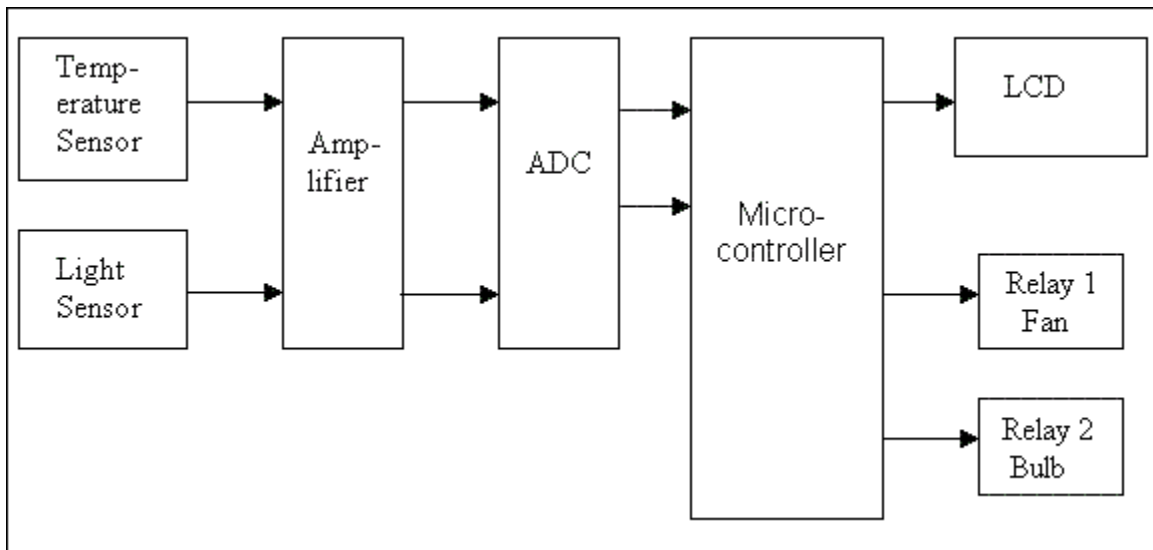
Code	Project Title
1230	Greenhouse Environment Monitoring and Controlling

Synopsis for Greenhouse Monitoring and Controlling

1. Introduction

This project is used to measure the various parameters like Temperature and Light and display them on a LCD. Temperature and light is sensed by respective sensors and sensor output is amplified and given to ADC. Microcontroller controls these parameters and keeps them at some predefined levels using relay interface. These relays can be connected to Fan/Heater. At the same time these values of temperature and light to a computer through serial port.

2. Block Diagram



3. Block Diagram Description

It mainly consist of following blocks

1. Sensors: we are going to use temperature sensor and light sensor to sense temperature and light respectively. These sensors sense the parameters and gives corresponding voltage output

2. Amplifier: As the voltage output from the sensors is in milliVolts, it has to be increased to 0 to 5 volts range. We are going to use linear amplifier for this purpose.

3. ADC: The main part of our project is microcontroller which reads only digital input. (0V & 5V) But the output of Amplifier is in analog form, so it has to be converted into digital format, for this purpose we are going to use ADC to convert analog output from amplifier into the digital output to be given to microcontroller

4. Microcontroller: This is the CPU (central processing unit) of our project. We are going to use microcontroller of 8051 family. The various functions of microcontroller are like

I. Reading the digital input from ADC which is derived from Temperature and Light sensor. II. Sending this data to LCD so that the person operating this project should read the values of temperature and light. III. Controlling the parameters like Temperature, light, turning On/Off the respective relays IV. Sending the values of temperature and light to the computer using serial port

5. Relay: We have used 2 relays in our project. First one will be turned on when the temperature falls below the desired value. And the second relay will be turned on when temperature reaches above the desired value. (e.g. if the desired value is 20 degree C, then Relay 1 will be turned on when temperature is 19 or below and Relay 2 will be turned on when temperature is 21 or above)

Application and Advantage:

1. Can be used in green houses to control the temperature and light for the proper growth of plants
2. With little modification, this project can be used in Mechanical companies to measure various parameters of operating machines like temperature and light.
3. Temperature monitoring and controlling action can be used in home or various halls like conference room, seminar hall to control the temperature of room

Future Development:

1. We can monitor more parameters like Humidity, PH of soil, pressure, water level and at the same time control them
2. We can send this data to a remote location using mobile or internet
3. We can draw graphs of variations in these parameters using computer

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