

## Abstract Details

**Title:** Weather Monitoring System

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**Abstract:** The system designed for monitoring climate changes such as (Temperature, Atmospheric pressure, Relative humidity, Wind speed), it helped the observers to get accurate reading in real time and record the sample of data in specific time to predict the weather changes in future, in this design we used appropriate sensors, the analogue outputs of the sensors are connected to a PIC 16F877A microcontroller through an analog to digital converter (ADC) for digital signal conversion. An LCD 20x4 display is also connected to the microcontroller to display the measurements, for analysis and archiving purposes, the data also transferred from microcontroller to a PC using a serial communication interface. The PC server program receives data from microcontroller unit via serial port; the data received are decoded, stored in database file, displayed in graphical user interface (GUI) and then transmitted to clients through a network using (TCP/IP) protocol. The client's software provides display the received data from a network in a graphical user interface (GUI). The system has many advantages as compared to other systems in terms of cost, accuracy of measurement, smaller size, huge memory capacities, on device display (LCD), and greater portability [1].

**Keywords:** PIC 16F877A Microcontroller, Analog to Digital Converter (ADC), PC Server, Graphical User Interface (GUI), Database File, (TCP/IP) Protocol, Clients.