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# Smart Weather Monitoring System Using Arduino

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**Abstract**: *Weather is the state of the atmosphere, to the degree that it is hot or cold, wet or dry, calm or stormy, clear or cloudy. Most weather phenomena occur in the troposphere, just below the stratosphere. Weather generally refers to day to-day temperature and precipitation activity, whereas climate is the term for the average atmospheric conditions over longer periods of time. When used without qualification, weather, is understood to mean the weather of earth. Monitoring the weather conditions manually is difficult. This paper present our work to develop an automated system which monitors the weather condition. The weather condition is driven by air pressure (temperature and moisture) differences between one place and another. These pressure and temperature differences can occur due to the sun angle at any particular spot. Through this system we can automatically collect the information about humidity and temperature. The details are stored in a database and according to current and previous data we can produce the results in graphical manner in the system.*

*The Smart Weather Monitoring System is an innovative solution designed to collect, process, and display real-time atmospheric data using Internet of Things (IoT) technology. This system integrates sensors to measure key environmental parameters such as temperature, humidity, and air pressure, and transmits this data to a central server for analysis and storage. A custom-built web interface presents the data in a user-friendly format, allowing users to monitor weather conditions remotely from any device with internet access. The system enhances accuracy and efficiency in weather observation, with potential applications in agriculture, disaster management, and smart city infrastructure. Its modular design ensures scalability and adaptability for various environments and use cases, making it a practical tool for both urban and rural settings.*

**Keywords**: Climate control, Weather analysis, Temperature Moderation, Moisture Control, Humidity Control, Arduino



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