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Weather Monitoring and Forecasting System

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Abstract: *This project proposes an IoT-based Weather Monitoring and Forecasting System that leverages sensor technology and Machine Learning (ML) to provide real-time weather data and accurate predictions. A NodeMCU (ESP8266) microcontroller collects data from DHT11 (temperature & humidity), BMP180 (barometric pressure), and MQ135 (air quality) sensors, transmitting it to a cloud server for analysis. The Decision Tree algorithm classifies weather conditions based on sensor readings and generates forecasts, which are displayed on an interactive dashboard. This cost-effective and scalable system enhances prediction accuracy, disaster preparedness, and environmental monitoring, making it well- suited for agriculture, smart cities, and climate studies.*

Keywords: IoT-based Weather Monitoring

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