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# Design and Development of IoT based System for Retrieval of Agrometeorological Parameters

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##### Abstract:

The Internet of Things (IoT) has the ability to transform agriculture industry. Smart farming based on IoT technologies will help farmers to increase yields and better crop management. The objective of this research is to design and develop a near real-time web-based weather and soil monitoring system capable of increasing the crop yield with the help of study of different weather and soil parameter values. This implementation resulted in a monitoring system that can collect the current air temperature, humidity, dew point, heat index, air pressure, rain intensity, soil moisture and soil temperature. The system provides current updates of soil and weather parameters as well as historical values of those parameters. The result obtained in this research is used for computing heat index and monitoring environmental effect on crops. This study demonstrates the ability of data acquisition in the near real-time and remote location accurately and efficiently.

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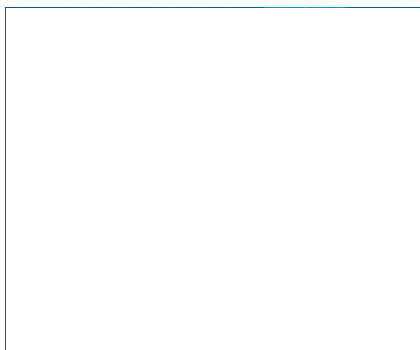


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**I. INTRODUCTION**

The Internet of Things (IoT) is an emerging global and high-end technological evaluation that helps the interconnection and communication by speedup of a device-to-device, device-to-human and human-to-human [1]. It is a network in which ordinary and everyday objects are furnished with sensing and activation functionalities will be associated with the Internet through wireless or wired networks [2]. IoT refers to a network of billions of physical devices like sensors, actuators or any devices that are connected to the internet and can collect and share the data using different web services [3]. The basic architecture of IoT is divided into three sections: sensor layer, network layer, and application layer [4]. The sensor layer is responsible for reading all kinds of sensors like temperature and humidity sensor, proximity sensor, pressure sensor etc. The network layer is made out of the different structure of networks, including private networks, cloud computing platforms, and the internet. The application layer presents adaptable interfaces amongst clients and the system [5]. Because of low-cost processors and wireless sensor networks; it becomes easy to turn anything into IoT. IoT can add some level of digital intelligence to devices, enabling them to communicate and also to merge the digital and physical world. IoT has massive possibilities for developing new sensible applications in almost every discipline [6].

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