Smart Irrigation Systems and Website: Based Platform for Farmer Welfare

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Abstract : Agriculture has a major impact on the Indian economy, with the highest employment ratio than any sector of the country. Currently, most of the traditional agricultural practices and farming methods are manual, which results in farmers not realizing their maximum productivity often due to increasing in labour cost, inefficient use of water sources leading to wastage of water, inadequate soil moisture content, subsequently leading to food insecurity of the country. This research paper aims to solve this problem by developing a full-fledged web application-based platform that has the capacity to associate itself with a Microcontroller-based Automated Irrigation System which schedules the irrigation of crops based on real-time soil moisture content employing soil moisture sensors centric to the crop's requirements using WSN (Wireless Sensor Networks) and M2M (Machine To Machine Communication) concepts, thus optimizing the use of the available limited water resource, thereby maximizing the crop yield. This robust automated irrigation system provides end-to-end automation of Irrigation of crops at any circumstances such as droughts, irregular rainfall patterns, extreme weather conditions, etc. This platform will also be capable of achieving a nationwide united farming community and ensuring the welfare of farmers. This platform is designed to equip farmers with prerequisite knowledge on tech and the latest farming practices in general. In order to achieve this, the MailChimp mailing service is used through which interested farmers/individuals' email id will be recorded and curated articles on innovations in the world of agriculture will be provided to the farmers via e-mail. In this proposed system, service is enabled on the platform where nearby crop vendors will be able to enter their pickup locations, accepted prices and other relevant information. This will enable farmers to choose their vendors wisely. Along with this, we have created a blogging service that will enable farmers and agricultural enthusiasts to share experiences, helpful knowledge, hardships, etc., with the entire farming community. These are some of the many features that the platform has to offer.

Keywords : WSN (wireless sensor networks), M2M (M/C to M/C communication), automation, irrigation system, sustainability, SAAS (software as a service), soil moisture sensor

Conference Title : ICAITSF 2022 : International Conference on Agricultural Internet of Things and Smart Farming
Conference Location : Tokyo, Japan
Conference Dates : April 25-26, 2022