Automated Smart Irrigation System using Raspberry Pi

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Abstract

Water is the most essential contribution for upgrading agricultural productivity and therefore expansion of water system has been a key format in the improvement of farming in the nation. An Automated Sprinkler irrigation method distributes water to crops/plants by spraying it over the crops/plants like a natural rainfall. In this thesis we will develop an automated sprinkle system that will help a farmer/people to know about his field, and the status of his plant at his home or he may be residing in any part of the world. This work will helps the farmers to irrigate the farmland in a very efficient manner with automated irrigation system based on soil, humidity, weather. This sprinkler system will provide control for soil temperature, moisture sensing to ensure plants is watered when there is demand, live streaming and also provide the temperature, humidity sensing, forecast lookup from other weather services. Whenever there is a change in temperature, humidity and current status of rain of the surroundings these sensors senses the change in temperature and humidity and gives an interrupt signal to the raspberry pi. Water excess irrigation not only reduces plants production but also damages soil fertility and also causes ecological hazards like water wasting and salinity. In recent years the awareness of
water and energy conversation has resulted in the greater use of sprinkler system. Currently the automation is one of the important roles in the human life. It not only provides comfort but also reduce energy, efficiency and time saving. Now a day the industries are using an automation and control machines which are high in cost and not suitable for using in a farm & garden field. So in this work we will design a smart irrigation technology based on IoT using Raspberry pi. The proposed sprinkler system will be low in cost and usable by the Indian farmers. Raspberry pi is the main heart of the overall system.

References


Index Terms

Computer Science Circuits and Systems

Keywords

IBM Bluemix; Internet of Things (IoT); Raspberry pi; Soil moisture sensor; Water motor;