PNT2022TMID07016 - LITERATURE SURVEY

SMART FARMER - IoT Enabled Smart Farming Application

ABSTRACT:

India's population is reached beyond 1.2 billion and the population rate is increasing day by day then after 25-30 years there will be serious problem of food, so the development of agriculture is necessary. Today, the farmers are suffering from the lack of rains and scarcity of water. The main objective of this paper is to provide an automatic irrigation system thereby saving time, money & power of the farmer. The traditional farm-land irrigation techniques require manual intervention. With the automated technology of irrigation, the human intervention can be minimized. Whenever there is a change in temperature, humidity of the surroundings and soil moisture level - these sensors sense the change in temperature, humidity and moisture level in soil and gives an interrupt signal to the smart IoT system.

INTRODUCTION:

India's major source of income is from agriculture sector and 70% of farmers and general people depend on the agriculture. In India most of the irrigation systems are operated manually. These outmoded techniques are replaced with semi-automated and automated techniques. The available traditional techniques are like ditch irrigation, terraced irrigation, drip irrigation, sprinkler system. The global irrigation scenario is categorized by increased demand for higher agricultural productivity, poor performance and decreased availability of water for agriculture. These problems can be appropriately rectified if we use automated system for irrigation.

NEED FOR AUTOMATIC IRRIGATION:

➢Simple and easy to install and configure.

➢ Saving energy and resources, so that it can be utilized in proper way and amount.

➢ Farmers would be able to smear the right amount of water at the right time by automating farm or nursery irrigation.

➢ Avoiding irrigation at the wrong time of day, reduce runoff from overwatering saturated soils which will improve crop performance.

➢ Automated irrigation system uses valves to turn motor ON and OFF. Motors can be automated easily by using controllers and no need of labour to turn motor ON and OFF.

➢ It is precise method for irrigation and a valuable tool for accurate soil moisture control in highly specialized greenhouse vegetable production.

➢ It is time saving, the human error elimination in adjusting available soil moisture levels.

LITERATURE REVIEW:

- The system supports water management decision, used for monitoring the whole system with GSM(RS-232) module.
- The system continuously monitors the water level (Water level Sensor) in the tank and provide accurate amount of water required to the plant or tree (crop).
- The system checks the temperature, and humidity of soil to retain the nutrient composition of the soil managed for proper growth of plant.
- Low cost and effective with less power consumption using sensors for remote monitoring and controlling devices which are controlled via SMS using a GSM using android mobile.

ADVANTAGES:

Discourage weeds, saves water and time, statistical data can be used to control diseases and fungal growth, simplest model.

DISADVANTAGES:

This system is just limited to the automation of irrigation system and lacks in extra ordinary features

REFERENCES:

[1] R.Suresh, S.Gopinath, K.Govindaraju, T.Devika, N.SuthanthiraVanitha, "GSM based Automated Irrigation Control using Raingun Irrigation System", International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 2, February 2014.

[2] Pavithra D.S, M. S .Srinath, "GSM based Automatic Irrigation Control System for Efficient Use of Resources and Crop Planning by Using an Android Mobile", IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) Vol 11, Issue I, Jul-Aug 2014, pp 49-55.

[3] LaxmiShabadi, NandiniPatil, Nikita. M, Shruti. J, Smitha. P&Swati. C, "Irrigation Control System Using Android and GSM for Efficient Use of Water and Power",International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 7, July 2014.

[4] Shiraz Pasha B.R., Dr. B Yogesha, "Microcontroller Based Automated Irrigation System", The International Journal Of Engineering And Science (IJES), Volume3, Issue 7, pp 06-09, June 2014.

[5] S. R. Kumbhar, Arjun P. Ghatule, "Microcontroller based Controlled Irrigation System for Plantation", Proceedings of the International MultiConference of Engineers and Computer Scientists 2013Volume II, March 2013.

[6] Yunseop (James) Kim, Member, IEEE, Robert G. Evans, and William M. Iversen, "Remote Sensing and Control of an Irrigation System Using a Distributed Wireless Sense