BE PROJECT

TOPIC: SMART DRIP IRRIGATION SYSTEM

Scope:

Traditionally in farming, drip irrigation is not manual which makes it a tedious task for the farmers. In agriculture the major problems which Indian farmers face is the water scarcity and it is getting critical day by day. There are areas in India which also face droughts. To improve the usage of water the drip irrigation system is used. We can make it more effective with a method “Automated Drip irrigation system using weather prediction for efficient use of water resources.” We propose a “Smart Drip automated Irrigation system” through IOT and Machine learning and data Analytics. The underlying idea behind the project is to help us to use the available water resources more efficiently not only just by sensing the water moisture present in the soil but also by predicting the weather by taking in consideration of the crucial temperature and humidity as parameters. The nitrogen and pH content of the soil is also of utmost importance for the crop. Different crop has different requirements of weather, soil and water requirements. Taking all into consideration through an algorithm we can control and regulate the amount of flow of water. This will benefit the environment and also the farmers.

Technology Stack :

Programming languages Used:

1)Machine Learning : Python and it’s libraries
2)Raspberry Pi3 : GPIO (general-purpose input/output) with Python
3)GUI : HTML/PHP

How it will be used ?

We will connect the pH sensor and Nitrogen sensor with the Raspberry Pi. Then we take real time data(along with moisture sensor and temperature)and input the data in our system. Now as we will apply machine learning through python we take these real time input and output the amount of water to be used in drip irrigation.

Benefits for Environment:

Effective use of water is the mantra of our project.When we use the water in appropriate quantities we utilise the soil properties to it’s maximum extent. Suppose for example,peanuts require less water whereas cotton requires then we should provide the water content respectively. Also how much water we can save by this process !Benefits for society Agriculture sector in India contributes to a major source of income . Irrigation is an essential component of crop production in many areas. Right now in India drip irrigation systems are operated manually. Effective use of water is the main concern of our project.Traditionally people used to go to farms inorder to adjust the water requirements . The solution to this problem will be solved using automated drip irrigation system. Using automated drip irrigation system the water requirements will automatically be detected depending upon on the moisture

content of soil,temperature,humidity and climate and also depending upon on the water requirements for the particular crops.

Application:

1) Will help farmers to not operate drip irrigation system manually.
2)It will only output the amount the water required by the particular crop accordingly.
3)It will also see the pH content and Nitrogen content along with moisture content and temperature of that particular area.
4)We will also alert the farmer if the fertilise value is less than the required value.

Group Members:

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