Smart Farmer - IoT Enabled Smart Farming Application

Team ID	PNT2022TMID04114
Project Name	Project – Smart farmer-IoT enabled smartfarming application.

LITERATURE SURVEY:

PROJECT:

With the exponential growth of world population, according to the UN Food and Agriculture Organization, the world will need to produce 70% more food in2050, shrinking agricultural lands, and depletion of finite natural resources, the need to enhance farm yield has become critical. Limited availability of natural resources such as fresh water and arable land along with slowing yield trends inseveral staple crops, have further aggravated the problem. Another impeding concern over the farming industry is the shifting structure of agricultural workforce. Moreover, agricultural labor in most of the countries has declined. As a result of the declining agricultural workforce, adoption of internet connectivity solutions in farming practices has been triggered, to reducethe need for manual labor.

IoT solutions are focused on helping farmers close the supply demand gap, by ensuring high yields, profitability, and protection of the environment. The approach of using IoT technology to ensure optimum application of resources to achieve high crop yields and reduce operational costs is called precision agriculture. IoT in agriculture technologies comprise specialized equipment, wireless connectivity, software and IT services.

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This system is designed to collect the values of temperature, soil moisture, humidity etc. Also, at the same time, human detection can be analyzed from thefields which helps the motors to turn on and off which maintains the water levelof the crop based on the requirement. Also, an algorithm is employed to predicta suitable crop and yield according to the situation.

To make the farming easy and more profitable, IoT will be very helpful in collecting the data from the fields and machine learning will play a keen role

inmaking the prediction of crops and usage of fertilizers suitable for the soil.

The system can be improved by adding more sensors like detecting the diseases andbug detection of the crops to alert the farmer in advance to take necessary precautions. Designing a platform that connects the farmers and the dealers in that area could make the farmers easy to sell the products at the best prices.

[2] CH Nishanthi1, Dekonda Naveen , Chiramdasu Sai Ram , Kommineni Divya, Rachuri Ajay Kumar1 Associate Professor, ECE Dept., Teegala Krishna Reddy Engineering College, Hyderabad, India, Teegala Krishna Reddy Engineering College, Hyderabad, India

This system concentrates on monitoring the farming conditions through sensors like Humidity, Temperature, and soil moisture; LDR is used to sense the light intensity for the farm, and also IR sensor is used to detect the pest, birds, and humans by their body temperature and alerts the user through the message format to their mobile These sensors are the interface to process module Arduino-UNO. The LCD is used to display the status of different sensors. Whenthere is a change in temperature condition, the sensor detects and turns ON the DC and cools down the condition. After the temperature comes to a normal state, the DC fan will turn OFF . LDR (Light Dependent Resistor) is used to detect the light intensity in the farm. When the light intensity is less on the farm,the LDR senses the condition and turns ON the bulb. When the required light intensity is back, the bulb will turn OFF . The soil moisture sensor is used to sense the moisture level in soil (water level) when the water levels are reached low in the ground. The ground gets dry, and the sensor detects it, then turn ON the DC water pump. When floor gets moisturized, the DC water pump will turn OFF. The user can monitor these conditions in mobile phone with the help of WiFi module through IOT mobile site.

ADVANTAGES: This system increases the use of IOT devices and make a better crop yielding facilities. The sensors used also provide a best technological solution the all the problems.

[3] Jirapond Muangprathub, Nathaphon Boonnam, Siriwan Kajornkasirat,Narongsak Lekbangpong, Apirat Wanichsombat, and Pichetwut Nil- laor. IoT and agriculture data analysis for the smart farm. Computers and electronics in agriculture.

The study developed a WSN model for watering crops to maximize agriculture by designing and developing a control system that connects t h e node sensors inthe field to data management via smartphone and web application. The model consists of three components, hardware that acts as a control box for connecting to and obtaining agricultural data, a web application that manipulates crop data and field information, and a mobile application that controls crop irrigation. Thegathered data were analyzed using the data mining technique to estimate the appropriate temperature, humidity, and soil moisture for crops in the plan. The result showed that the moisture content in the soil was suitable for the vegetables, the model reduced costs and increased agricultural productivity.