TEAM LEADER : PRIYA .M

TEAM MEMBER 1 : KAVIANJALI .K.S

TEAM MEMBER 2 : MYTHILI .S.U

TEAM MEMBER 3 : NISHANTHINI .N

TEAM ID : PNT2022TMID18018

LITERATURE SURVEY :-

SMART FARMER - IoT ENABLED SMART FARMING APPLICATION

ABSTRACT :

Agriculture is the most important sector of the Indian economy that provides employment to almost half the population of the country. Traditional way of farming had less concentration on humidity, water level and climatic condition which affects a farmer dreadfully. This farming will lead a loss to farmer because of labour insufficiency, water scarcity, inefficient knowledge about pest, crop selection for their land. To overcome these issues smart farming comes into existence. Automation of the farming process is called as smart farming. Internet of Things help in collecting information about various conditions like weather, moisture, temperature and fertility of soil. Based on this information farmer can irrigate their crop with required amount of water, add required amount of fertilizer, and cultivate suitable crop based on the soil nature. This paper discusses about various technologies used in smart farming, various application in smart farming and issues of IoT in agriculture.

INTRODUCTION :

The advancement of science and technology, the global GDP has risen consistently. As a result, the presence of this reality has encouraged the development of smart farming, which use sensors and irrigation systems to manage crops as they grow. With sensor-based computer applications, more accurate information about the crop, soil, and environment may be gathered. It promotes high-quality process and raw materials throughout the entire product process. This is because utilising the Internet of Things in smarter agriculture makes it more competitive than traditional methods. Combined with IoT-based smart agriculture technologies, organic agricultural agriculture and family farming may see a benefit. It is the case that between agricultural producers and IoT technology, a digital breach has occurred, thus farmers are not vulnerable to IoT assaults. Sustainable use of water and input and treatment optimization will allow farmers to produce more food while also preserving the environment.

LITERATURE SURVEY :

The deployment of IoT in agriculture has the potential to affect our society and the rest of the world. Nowadays, we see weather, soil, and water drying up as land that's critical to agriculture declines, making it harder and harder to produce food. Agriculturalists will benefit from using Internet of Things (IoT) technology, which will help them cut down on generated wastelands while also improving production. This figure could stem from the number of missions the farmhouse automobiles have performed, or from the amount of compost used in the composting process. A smart agriculture system may be defined as a food system that utilizes emerging nutrition that is uncontaminated and is accessible to a wide number of people. With the expansion of the entire Farming system with the addition of the Smooth Agricultural IoT platform, the Internet of Things (IoT) plays a larger role in agriculture. Although the Internet of Things (IoT) is utilized in Farming, it has saved not only the time of agriculturalists but also massive quantities of liquid and power, thanks to the

interconnectedness of devices and services. It is able to preserve frequently encountered topographies including moisture, high temperature, soil, etc. and offers real-time surveillance through the crystal-clear map. In agriculture, embracing Internet of Things (IoT) will yield various benefits. For example, the farmhouse automobiles have accomplished numerous missions. Smart agriculture is thus basically an integrated, uncontaminated method of emerging nutrition that supports crowds. The smooth agricultural system extends the farming system by not only watching the soil, but also physically monitoring it [5,6]. Even though individual devices and networking aren't directly saving the agriculturalists' time, the Internet of Things (IoT) is negatively affecting wasteful spending on assets such as Liquid and Power. The overall goal of this model is to preserve frequent topographical features like moisture, temperature, soil, and other information, and provide a real-time crystal-clear surveillance. In addition to the advantages described above, agriculture will benefit from implementing Internet of Things (IoT).

CHALLENGES OF IoT FOR AGRICULTURE :

The is a All smart farming responses must start with data analysis. If you can't make sense of the information you've gathered, it'll be of no use. As a result, you'll need strong data analytics, predictive algorithms, and devices to analyze the data and derive operational insights [18,19]. the equipment is made of of Selecting the sensors for your instrument is critical for internet of things agriculture (or create a custom one). The manner in which you look for information and how you make decisions all influence your choice. Whatever the situation may be, it is possible to discern the efficacy of your product based on the quality and consistency of the data you gather. Keeping up with Hardware maintenance is an important project in agriculture Internet of Things products, since sensors are commonly used in the topic and can be easily destroyed. As a result, you must make certain that your hardware is both reliable and simple to maintain. Then you'll have to update your sensors more often than you'd like. The revolution is

underway, In figure .5. shows the various Smart farming tools. In order to be used in the field, intelligent agricultural applications must be adapted [20,21]. To access the information on the website, a company owner or farm administrator must be able to use a mobile phone or a personal computer anywhere in the globe. Furthermore, each linked tool must be self-contained and have sufficient wireless diversity to connect to other devices and transmit data to the central server. The services available You'll need a robust internal infrastructure to ensure that your smart farming application runs smoothly (and that the load of records can handle it). Furthermore, the internal systems must be pleasant to use. Failure to make our system more user-friendly only increases the appeal of someone who interrupts, steals your information, or even uses your self-satisfying tractors.

CONCLUSIONS :

Conclusions In this study, we presented an overview of IoT and big data for the smart agriculture sector. Several issues related to promoting IoT deployment in the agriculture sector have been discussed in detail. Survey results indicate that many studies have been performed to apply IoT for smart agriculture, aiming to enhance productivity, reduce human labour, and improve production efficiency. The benefits of applying IoT and big data in agriculture were discussed. In addition, we also pointed out the challenges we need to overcome to be able to accelerate the deployment of IoT in smart agriculture. However, there are still some challenges that need to be addressed for IoT solutions to be affordable for the majority of farmers, including small- and medium-scale farm owners. In addition, security technologies need to be continuously improved, but in our opinion, the application of IoT solutions for smart agriculture is inevitable and will enhance productivity, provide clean and green foods, support food traceability, reduce human labour, and improve production efficiency. On the other hand, this survey also points out some interesting research directions for security and communication technologies for IoT. We think that these will be very exciting research directions in the future.

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