Project Title: Smart Monitoring of Agriculture

Final Year Project Proposal

(BSCS)

By

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Abstract
The project aims to build a way to help Farmers and people related to the Agricultures to monitor their fields and make appropriate decisions. By creating a system or an Digital monitor like an field expert who can help or tell us about the condition of field and what is required for field to make it better. Using sensors and devices a person can easily monitor his field without going to field and make decisions according to condition of field, weather, climate change and other aspects.

Introduction
As we see day by day world is moving towards technology. Agriculture is the major asset of any country(contribution of agriculture in GDP is about 18.9%) but we have lack of work in this field with technology. There is also a major wastage of water due to over watering of fields just because lack of knowledge of water needs of field. Our Farmers are facing very difficulties such as they do not get proper crops, their fields may burn due to water deficiency, their fields may fall due to heavy wind or they don't get proper crop or anything they plant due to access of water, or they do not plant something according to field requirements. So, their must be a system which monitor the condition of field/land, water need, chemical need etc. and notify the farmer or the person about the need and proper actions about the field. With IoT efficiency level would increase in terms of usage of soil, water, fertilizers, pesticides etc.

Problem Statement
Our Project is aiming to provide a smart system to the farmers and the people who are related to the field of agriculture and facing issues related to their fields Such as:

- Fields Burn.
- Lack of Water.
- Not Proper Care of Fields.
- Excessive use of Water.
- Not proper Monitoring.
- Not Proper chemical intakes for field.
- Wastage of Water.
- Wastage of resources.

These are the some major issues every farmer is facing now a day around us So, this system will help them in many aspects.

Literature Review
There is a lot of work done in the field of agriculture using IoT has been done by the developed countries. They have implemented automated irrigation systems in their farms. Smart irrigation systems, smart plant monitoring, Autonomous greenhouse etc. But this technology is not using by our farmers as we are less educated and under developed country.

Research and Practical Examples that have been done:

"Agriculture monitoring system" by N. M. Z. Hashim, S. R. Mazlan … in October 2015.

"IoT based SMART FARMING SYSTEM". By Yasir Faheem, Mrs. Taniya Sarkar in December 2018

YEAR	DATA ANALYSIS
2000	**525 Million Farms Connected to IoT**
2016	**540 Million Farms till date Connected to IoT**
2035	**780 Million Farms Would be Connected to IoT**
2050	**2 Billion Farms are likely to be Connected to IoT**

This shows the growth of IoT based adoption in Agriculture sector from year 2000-2016 and forecasts of year 2035-2050. So, by seeing this we should have to move towards and use it in our local farms for better production.

Project scope

In this project, we are going to build a **Smart Monitoring using IoT**. The objective of this project is to offer assistance to farmers in getting Live Data (Temperature, Humidity, Soil Moisture, Soil Temperature, Chemical Intake) for efficient environment monitoring which will enable them to increase their overall field and quality of products. This smart agriculture using IoT system consists of sensors, Moisture sensor, Temperature Sensor, Weather Sensor, Electro-Chemical Sensor, and Android interface for end User. When the IoT-based agriculture monitoring system starts, it checks the Soil moisture, temperature, humidity, and soil temperature. It then sends this data to the IoT cloud for live monitoring. It notify the user about their land and user can also use it to monitor the type of field and what to grow according to the type of land. Apart from this, Rain Alarm and soil moisture detector circuit can also be helpful in building Smart Agriculture Monitoring System.

Smart Monitoring system will tell the user about their land condition, their crops condition, remotely whenever he wants and also they can monitor their land by using this system.

Components:

Hardware:

- Electronic Devices.
- Monitoring Sensors.
- Android Device.

Software:

- IOT.

- Embedded Systems.
- Android Application.

Project Development Methodology:

By using IOT field, Sensors, android tech. some coding, we will create a system that can check the condition of the land, its needs and also tells the end user about it with the help of a User Interface.
By making an interface that will be easy to use and interact with while setting it up for monitoring.
It will work while including various scenarios and making sure that the outcome is always desirable.

References:

- **"A Survey on the Role of IoT in Agriculture for the Implementation of Smart Farming"** by Shoaib Farooq, Adnan Abid, Kamran Abid 2019

- **"Rural Development of Pakistan with IoT",** by Muhammad Usman, Wajjid Ali 2019.

- **"Agriculture monitoring system"** by N. M. Z. Hashim, S. R. Mazlan … in October 2015.

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