IOT BASED ON SMART FARMING

TOPIC OVERVIEW:

The objective of this report is to proposed smart farming system based on internet of things which is useful for farmer to have a live data of soil moisture environment temparture at affordable cost. The development of smart farming devices is day by day turning the face of agriculture production by not only enchaning it but also making it cost-efficient and reducing wastage. It is used for efficient environment monitoring which is used to increases their overall yield of crops and quality of products. Smart farming system proposed is integrated with Arduino Tech mixed with different sensor and wife module which produce live data feed that can be used by all farmer. This infrastructure with self configuring capabilities based on the study and interoperable communication to protocol where physis & virtual things have identities physical attributes and virtual personalities and use interface and are integrated into the information network communicate data associated with user and their environment.

TECHNOLOGIES:

With the adoption of IOT in various areas like industry, homes and even cities huge potential is seen to make everything smart. Even the agricultural is also adapting IOT technology these days and this turn in led to development of smart farming. IOT is strong backbone of enabling tech wireless sensor network, cloud computing, big data, embedded system, security protocol and architecture protocol enabling communication web service internet. The system provides the concept of “plug and sense” in which farmer can directly implement smart farming by as such putting system on field and getting live data feeds on various smart phones, tables etc… data generated through sensor and can be easily shared and viewed by agriculture consultants from anywhere by using the technology of cloud computing. It also able to analyze the various sorts of data by using tech of big data analysis. IOT enable for easy collection and management of tons of data collected from sensor and cloud computing service like agriculture field maps, cloud storage etc…Data can be accessed live from anywhere key components for smart farming as with accurate sensor and smart equipment so the farmer can increases food production by 70% till year 2050. Which will in turn increases the usage of soil, water fertilizers pesticides and it also lead to the protection of environment.

TABLE:

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| **YEAR** | **DATA ANALYSIS** |
| 2000 | 525 Million farms connected to IOT |
| 2016 | 540 Million farms till date are connected to IOT |
| 2035 | 780 Million farms would be connected to IOT |
| 2050 | 2 Billion farms are likely to be connected to IOT |

FLOW CHART:

Start

Delay 10 seconds

Send data to thingspeak API

Get temperature and humidity values from analog pins

Connected to WIFI

Future wort would be focused move on increasing sensor on this system to fetch more data with repaired to pest control and by also integrating GPS module in this system to enhance this Agriculture technology to full fill agriculture precision ready product.

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| APPLICATION NAME | DESCRIPTION |
| CROP WATER MANAGEMENT | In order to perform agriculture activities in inefficient manner, adequate water is essential. Agriculture IoT is integrated with Web Map Service (WMS) and Sensor Observation Service (SOS) to ensure proper water management for irrigation and in turn reduces water wastage. |
| PRECISION AGRICULTURE | High accuracy is required is required in terms of weather information which reduces the chanceof crop damage. Agriculture loT ensures timely delivery of real time data in terms of weather forecasting, quality of soil, cost of labour and much more to farmer, |
| INTEGRARATTED PEST MANAGEMENT OR CONTROL(IPM/C) | Agriculture loT systems assures farmers with accurate environmental data via proper live data monitoring of temperature moisture, plant growth and level of pests so that proper care can be taken during production |
| FOOD PRODUCTION &SAFETY | Agriculture IoT system accurately monitors various parameters like warehouse temperature, shipping transportation management system and also integrates cloud based recording systems. |
| OTHER PROJECTS IMPLEMENTED TILL DATE | 1. The Phenonet Project by Open IoT.  2. CLASS Equipment  3. Precisionhalk's UAV Sensor Platform  4. Cleangrow's Carbon Nanotube Probe  5. Temputech's Wireless Sensor Monitoring |