**Smart Agriculture System Based On IoT**

**Project Summary**

Smart Agriculture System based on IoT is an system, which can monitor soil moisture and climatic conditions to grow and yield a good crop.In this system farmer can also get a real time weather forecasting data by using external platforms like Open Weather API.Farmer is also provided with a mobile app, in which he can monitor the temperature,humidity and soil moisture parameters, along with weather forecasting details. Based on all these parameters he can water his crop by controlling the motors using the mobile application.Even if the farmer is not present near his crop he can water his crop by controlling the motors, using the mobile application from anywhere.Here we are using the Online IoT simulator for getting the Temperature,Humidity and Soil Moisture values.

**Project Requirements**

◻ Aurdino

◻ Humidity Sensor

◻ Moisture Sensor

◻ Water level Sensor

◻ Proximity Sensor

◻ GSM Module

◻ Solar Power based water pump

**Functional Requirements**

Smart Farming System has advantages of cutting edge technologies such as IoT, Wireless Sensor Network to help farmers enhance the way farming is done.

sensors like humidity, moisture etc gets information about the field ,and help farmers so that they can take precise decisions on insights and recommendations based on the collected data.

* The humidity sensor measures the ambient temperature of the crop.
* The water level sensor measures the water level of the crop.
* Moisture sensor measures the level of moisture in the soil.
* GSM modem sends SMS notifications to the user at an interval of 5 minutes.
* The WiFi module sends the sensor values to the remote server via a WiFi connection and IOT protocols.
* Arduino controller communicates with the GSM modem and WiFi module, gathers data from the sensors and activates the output devices.

**Technical Requirements**

* Programming language : C (Aurdino Platform)
* Operating System : Windows
* Application in mobile : Android studio
* RAM Required : 4gb
* IBM Cloud
* Node red

**Project Deliverables**

Proposed system will be highly beneficial to farmers as farming accounts to more than 60% of occupation in our country. Crop production will be increased if it uses IOT & different sensors to gather information regarding irrigation outputs & also provides protection to farms. Also farmers can use remote technology to activate/deactivate water pumps which are powered by clean sources of energy thus keeping the environment clean.