PROJECT SCOPE DOCUMENT

❖ PROJECT SUMMARY:

The development of Smart Intelligent Agriculture is day by day turning the face of agriculture production not only by enhancing but also making it cost effective. IoT based farming may include collecting data on temperature, rainfall, humidity, wind speed, pest infestation, and soil content . The objective of the report is to propose IoT based Smart Agriculture System assisting farmers to get live data for efficient environment . Data can be through sensors on the field or through API forecasting . We have used Open Weather API Platform to get real time weather forecasting of our city . Sensors can collect data on rainfall, humidity, temperature and soil content, as well as other factors, that would help automate farming techniques. The IoT based Smart Agriculture System being proposed via this report is integrated with Node-Red technology . In this project we have built a mobile app using IoT to monitor soil moisture, temperature , humidity and climatic condition to grow and yield a good crop. This enables them to increase their overall yield and quality of products.

❖ PROJECT REQUIREMENTS :

Using IoT Simulator for Temperature Humidity and soil moisture values and open weather API for real time values. We are also accessing IBM cloud for aggregating data from tools like soil sensors, weather stations to help farmers make better decision about managing their crops .

❖ FUNCTIONAL REQUIREMENTS :

1. Monitoring Motor data by constructing python code to increase the quality of production.

2. Implementing real-time Weather forecasting of our city using Open Weather API and viewing through NODE-RED on web page .

3. Developing a predictive model of weather analysis using sensor. Monitoring events such as random temperature , humidity , moisture and passing data to IBM Watson cloud.

❖ TECHNICAL REQUIREMENTS :

a. Weather Monitoring : Monitoring weather constantly and alerting the farmers about the conditions such as moisture ,temperature ,etc.

b. Mobility: Farmers are now able to access information remotely from anywhere using the App.

c. Performance : Due to continuous monitoring of system, performance and growth of crop improves.

d. Management: It ensures proper management of water, pesticides for proper growth and fertility of crop and even the soil.

❖ SOFTWARE REQUIREMENTS :

- Node-red

  Node-red is programming tool required for wiring together hardware devices.

- IBM Cloud

  To compute data.

- Git-Hub

   To provide a web based graphic interface.

- Open Weather API

   To provide real-time weather information to build a software application.

- Python Idle

   For execution of Python programs

- Zoho Writer

   For documentation purpose.

❖ PROJECT DELIVERABLES:

A web application which would improve the entire Agriculture system On completion of the project we would get a web app providing
   I.   Weather Information using sensors

II. Motor controls remotely
III. Weather Information Using open weather API

❖ <u>PROJECT</u> <u>SCHEDULE</u> :

✚ Setting up the Development environment - 24May 2020

✚ Installing Slack , creating IBM platform and exploring IBM cloud platform 25 & 26 May 2020

✚ Installing Node-red -27 May 2020

✚ Installing Python IDLE -27 May 2020

✚ Creating IoT platform in IBM cloud platform and creating devices and connecting to Watson simulator - 28 May 2020

✚ Configuring the node in nodered platform to get the data from the device connected and creating an UI - 30 May 2020

✚ Python code to display the motor status - 1 June 2020

✚ Creating an account in open weather api and get the details of a city- 6 June 2020

- Creating an account in open weather api and get the details of a city , configuring the nodes in nodered to get the api data and Creating buttons and getting it in UI - 11 &12 June 2020

- Project scope document and project report document- 15 & 16 June 2020