

PROJECT SCOPE DOCUMENT

Project Name	Smart Agriculture system based on IOT
Project Objective	To implement a device based on IoT that can monitor Soil Moisture, Humidity and Temperature to grow and yield a good crop and to turn the Light and water-pump ON/OFF remotely using cloud.
Project Summary	<p>Agricultural lands are the heart of any country for economic development. Thus, it is the primary duty of the Government to preserve and protect the fields by any means. Science and new technologies have evolved but nothing could replace the dependency on agricultural farm lands. New technologies have been proposed for the betterment of the farmers, so that they can get a better result with more accuracy and less effort but with some limitations.</p> <p>India holds the 2nd position in the farm output. Over 70% of the rural households depend on agriculture as their principal means of livelihood. But the pressure on farms increased due to increase in population. This leads to more consumption of non- renewable energy sources.</p> <p>Keeping in mind the practical problems faced by the farmers, With the collaboration of SMARTBRIDGE(through RSIP-2020), I am trying to put forward an alternative agricultural model for the betterment of the next generation. We are going to use various modules like soil moisture sensor, pH sensor, humidity sensor, temperature sensor, electronic scarecrow (PIR sensor) under a single agriculture system to make it smarter. We ge the information about various parameters that effect the crop production through these sensors and make decisions to monitor the crop production even from distant places using cloud technology. We also incorporate remote monitoring of the system, control of water pump through cell phones, keeping track of more than one field and assessing the records of each field for future study, under a single system. As it may be a smart move towards the next generation agriculture, thus it can be called as 'Smart Agriculture System based on IOT'.</p>

Project Scope	<p>Farming has wide scope of applications when it comes to the IOT. The Imminent use of technology has positively managed to minimize the risk and waste experienced so far by the traditional farming methods. Farmers can now diagnose the areas detecting the fertility and conditions to carefully predict the possibility of the future yields.</p> <p>The Asia-pacific region presents an immense scope for market development, owing to the increasing urban population size, growing market penetration of internet in farm management, and favorable government investments.</p>
Project Requirements	<p>Functional Requirements:</p> <ul style="list-style-type: none">▶ Have a IBM cloud account▶ Node-red And Python IDE should be installed▶ Have a device in IBM IoTPlatform▶ Able to connect IoT simulator to IoT platform▶ Able to configure Node-Red to to get data from IoT Simulator▶ Have a web application▶ API interface to IoT Simulator <hr/> <p>Technical Requirements:</p> <ul style="list-style-type: none">▶ Basic knowledge of Python 3▶ Knowledge of IBM cloud computing▶ Programming Node-Red▶ Usage of IBM Watson IoT Simulator▶ Creating a Web Application and API <hr/> <p>Software Requirements:</p> <ul style="list-style-type: none">▶ IBM Cloud Platform▶ Python IDE▶ Node-Red▶ IBM Watson IoT Simulator▶ OpenWeather API▶ Slack▶ Github account

Project Deliverables	<ul style="list-style-type: none"> ➤ The Farmer will be able to monitor various parameters from a remote location. ➤ Controlling of pumping of water can be done even from a mobile. ➤ The farmer can easily reap the crop at the right time and plan for the next crop. ➤ This is cost effective and can be implemented easily. ➤ It eases the work in any season for a farmer.
Project Team	M Teja Babu

Project Schedule:

S.No.	Date	Task Description
01.	29-05-2020(fri)	Get the basic idea on the dashboard of smartbridge.
02.	30-05-2020(sat)	Install and explore the Slack channel.
03.	31-05-2020(sun)	Interact with the team members and the guide on slack channel.Discuss about the project.
04.	01-06-2020(mon)	Go through the discussion and the introduction video.
05.	02-06-2020(tue)	Explore about the kickoff template and start writing the scope of the project.
06.	03-06-2020(wed)	Identify the various requirements of the project.
07.	04-06-2020(thu)	complete the project kickoff document.
08.	05-06-2020(fri)	set up the development environment, create the github account.
09.	06-06-2020(sat)	Explore the Github.
10.	07-06-2020(sun)	Create IBM cloud account and Install the node-red locally.
11.	08-06-2020(mon)	Explore the IBM watson IOT platform
12.	09-06-2020(tue)	Install the Python IDE and understand it's fundamentals and working.
13.	10-06-2020(wed)	Connect the IOT simulaor to watson IOT platform.
14.	11-06-2020(thu)	Explore the IOT simulator while connecting.
15.	12-06-2020(fri)	Install the required nodes in the node-red.
16.	13-06-2020(sat)	Connect the IBM IOT device to get the simulator data.
17.	14-06-2020(sun)	Create an account in open weather API and Explore it.
18.	15-06-2020(mon)	Configure the open weather API platform.
19.	16-06-2020(tue)	Configure the node-red to get the weather forecasting data.
20.	17-06-2020(wed)	Configure the nodes to display the weather parameters
21.	18-06-2020(thu)	Configure the nodes for creating buttons and sending commands to IOT platform.
22.	19-06-2020(fri)	Write a python to subscribe to IBM IOT platform and get the commands.
23.	20-06-2020(sat)	Complete the entire working of project from the initial step.
24.	21-06-2020(sun)	Take out the different inputs and observe the output.

25.	22-06-2020(mon)	Contact the guide for the queries.
26.	23-06-2020(tue)	Start writing the report. Collect the relevant data.
27.	24-06-2020(wed)	Complete the survey and analysis.
28.	25-06-2020(thu)	complete the report writing and editing.
29.	26-06-2020(fri)	Review the report and submit. Complete the Github uploads.

