

## PROJECT DEVELOPMENT PHASE

### SPRINT DELIVERY - 2

Team ID	PNT2022TMID52856
Project Name	SmartFarmer - IoT Enabled Smart Farming Application

### BACKLOG

Release	User Story Number	User Story / Task	Story points	Priority	Team members
Sprint-2	USN-10	As a user, I can reach out to support staff using helpline chat in case of any queries and receive service agent details in case of service requirement.	2	High	Priya Dharshini C Vishalini A J
Sprint-2	USN-12	As a user, I will receive notification in case of sensor fault / disruption in power supply and compliant will be filed automatically.	1	High	Ranga Krishna Prasadh H Sathish P
Sprint-2	USN-13	As a user, I can remotely access the motorswitch to control irrigation.	2	High	Ranga Krishna Prasadh H Sathish P
Sprint-2	USN-26	As an admin, I can access sensor data in Watson.	3	High	Priya Dharshini C Vishalini A J
Sprint-2	USN-27	As an admin, I can view the output visualization in Node-Red UI.	5	High	Ranga Krishna Prasadh H Sathish P
Sprint-2	USN-16	As an admin, I can access the server ,check for errors in sensor reading and forwards details to helpline admin.	1	High	Priya Dharshini C Vishalini A J
Sprint-2	USN-17	As an admin, I can manage and organize customer details.	2	High	Ranga Krishna Prasadh H Sathish P




# BOARD

Projects / SmartFarmer - IoT Enabled Smart Farming Application  
SIESFA Sprint 2

0 days remaining **Complete sprint** ...

Q  SP  Epic ▾

GROUP BY **None** ▾  Insights

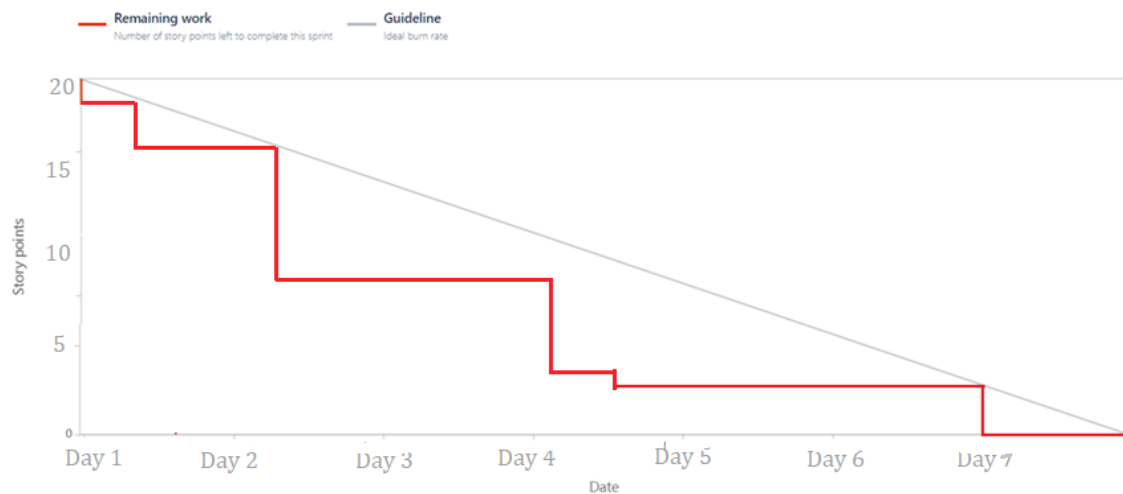
TO DO

IN PROGRESS

DONE 9 ISSUES ✓  
ESP32 to Watson MQTT Publishing  
CLOUD  
SIESFA-34 ✓ 3  
As a user, I can reach out to support staff using helpline chat in case of any queries, and receive service agent details in case of service requirement.  
DASHBOARD  
SIESFA-10 ✓ 2  
As a user, I can remotely access the motor switch to control irrigation.

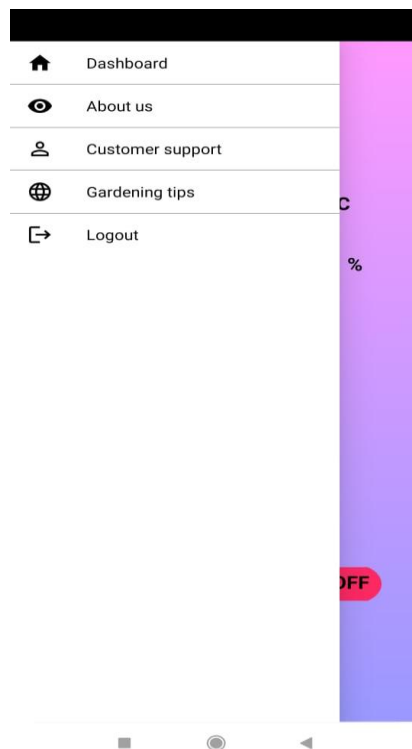
## SPRINT BURN DOWN CHART

Date - November 1st,2022 - November 7th , 2022

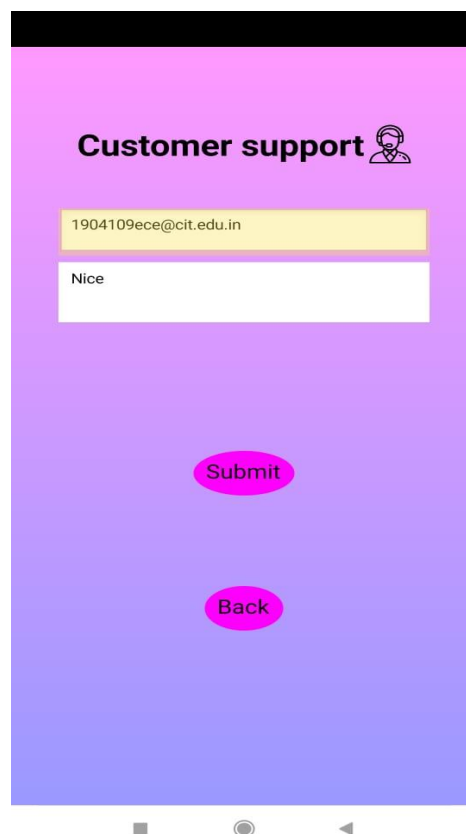


**USN-10**

## **NAVIGATION OPTIONS**

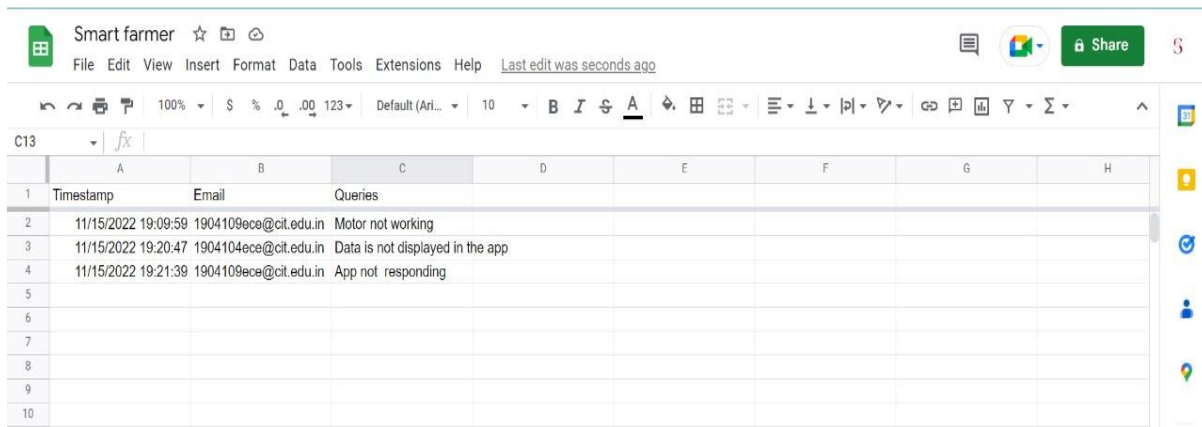


## **CUSTOMER SUPPORT**



## USN-16

### ADMIN DATABASE



Smart farmer

File Edit View Insert Format Data Tools Extensions Help Last edit was seconds ago

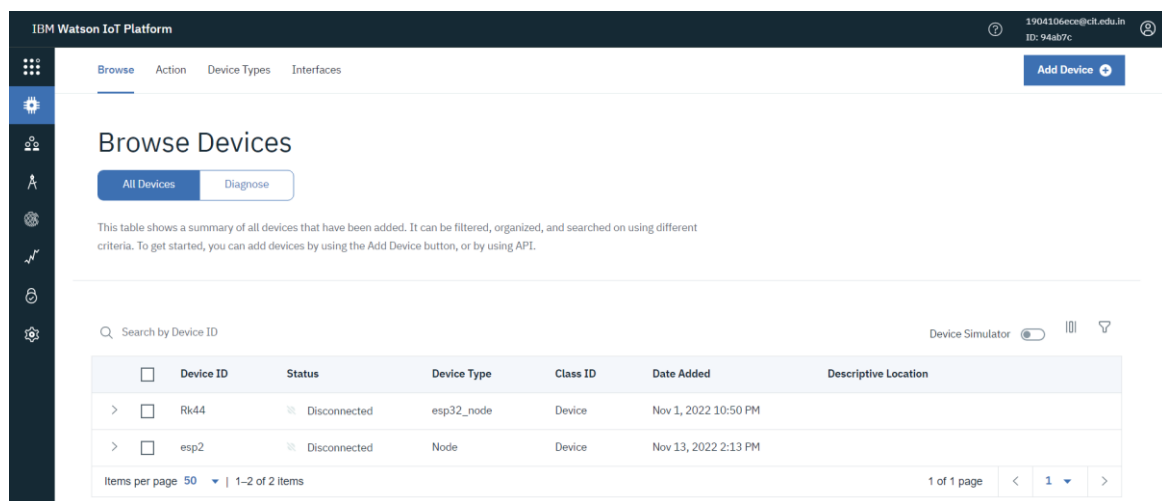
100% \$ % .0 .00 123 Default (Ari... 10 B I S A

	A	B	C	D	E	F	G	H
1	Timestamp	Email	Queries					
2	11/15/2022 19:09:59	1904109ece@cit.edu.in	Motor not working					
3	11/15/2022 19:20:47	1904104ece@cit.edu.in	Data is not displayed in the app					
4	11/15/2022 19:21:39	1904109ece@cit.edu.in	App not responding					
5								
6								
7								
8								
9								
10								

Admin access the Google sheets for checking errors in sensor reading

## USN-26

### IBM IOT WATSON SETUP



IBM Watson IoT Platform

1904106ece@cit.edu.in ID: 94ab7c

Browse Action Device Types Interfaces

Add Device

### Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
>	Rk44	Disconnected	esp32_node	Device	Nov 1, 2022 10:50 PM	
>	esp2	Disconnected	Node	Device	Nov 13, 2022 2:13 PM	

Items per page 50 | 1-2 of 2 items

1 of 1 page < 1 >

## A) INPUT FROM DEVICE SIMULATION

Node

esp2

▼

Events

1

▼

Event type name

Sensor\_data

Frequency

20 × Every Minute

Send

Payload

You can override field values in the event payload that is sent by this device. Specify the override values in the editor window.

0

{

1

"Temperature": random(16, 50),

2

"Soil moisture": random(250,850),

3

"Ambient Light-LDR":random(0,1023),

4

"Rain sensor":random(0,1023),

5

"pH sensor":random(5,9)

6

}

7

Cancel

Save

▼	esp2	Disconnected	Node	Device	Nov 13, 2022 2:13 PM
Identity	Device Information	Recent Events	State	Logs	
Showing Raw Data   No Interfaces Available					
Property	Value	Type	Event	Last Received	
Temperature	29	Number	Sensor_data	a few seconds ago	
Soil moisture	522	Number	Sensor_data	a few seconds ago	
Ambient Light-LDR	272	Number	Sensor_data	a few seconds ago	
Rain sensor	225	Number	Sensor_data	a few seconds ago	
pH sensor	7	Number	Sensor_data	a few seconds ago	

Action

Device Types

Interfaces

Identity

Device Information

The recent events listed show the live

Event	Value
Sensor_data	{"Temperature"::
Sensor_data	{"Temperature"::
Sensor_data	{"Temperature"::
Sensor_data	{"Temperature"::
Sensor_data	{"Temperature"::

## Event Payload

Event Name      Sensor\_data

Time Received      Nov 14, 2022 10:06 PM

```

1 {
2   "Temperature": 47,
3   "Soil moisture": 642,
4   "Ambient Light-LDR": 263,
5   "Rain sensor": 923,
6   "pH sensor": 8
7 }
```

## B) INPUT FROM HARDWARE SIMULATION

esp\_ibm\_2 | Arduino 1.8.15 Hourly Build 2021/05/31 10:33

File Edit Sketch Tools Help

esp\_ibm\_2

```

#define ORG "94ab7c"//IBM ORGANITION ID
#define DEVICE_TYPE "Node"//Device type in ibm watson IOT Pla
#define DEVICE_ID "esp2"//Device ID in ibm watson IOT Platform
#define TOKEN "ChVhYc0Dz (AD*rSw9A"
String data3;
float h, t;

//***** Formatting the values*****

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name
char subscribTopic[] = "iot-2/cmd/Motor/fmt/json";// cmd RE
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//cli

WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient); //cal

const int BUTTON_PIN = 19; // Arduino pin connected to button<
const int RELAY_PIN = 27; // Arduino pin connected to relay's
#define BUTPIN_A //D15 of ESP32 DevKit

wrote 3072 bytes (100 compressed) at 0.0000000 in 0.0 seconds (effective 1755.4 Kbit/s)...
Hash of data verified.

Leaving...
Hard resetting via RTS pin...

```

COM3

Send

```

Temperature: 28.00
pH level: 5
LDR reading = 1263 => normal light
Rain gauge: 1750      Raining?: Yes
Moisture value: 4095
Sending payload: {"Temperature":28,"Soil_moisture":4095,"Ambient_Light_LDR"
Publish ok

callback invoked for topic: iot-2/cmd/Motor/fmt/json
data: Motor_off
Motor_off

```

☒ Autoscroll ☐ Show timestamp

Newline 115200 baud Clear output

294

ESP32 Dev Module, Disabled, Default 4MB with spiffs (1.2MB APP+1.5MB SPIFFS), 240MHz (WiFi/BT), QIO, 80MHz 4MB (12MB), 921600, None on COM3

IBM Watson IoT Platform

1904106ece@cit.edu.in

ID: 94ab7c

⋮

⚙️

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🔧

Show

Action

Device Types

Interfaces

Add Device

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
> <input type="checkbox"/>	Rk44	Disconnected	esp32_node	Device	Nov 1, 2022 10:50 PM	
▼ <input checked="" type="checkbox"/>	esp2	Connected	Node	Device	Nov 13, 2022 2:13 PM	→ ...

Identity

Device Information

Recent Events

State

Logs

✕

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
status	{\"Temperature\":33,\"Soil_moisture\":17,\"Ambient...}	json	a few seconds ago
status	{\"Temperature\":54,\"Soil_moisture\":43,\"Ambient...}	json	a few seconds ago
status	{\"Temperature\":44,\"Soil_moisture\":86,\"Ambient...}	json	a few seconds ago
status	{\"Temperature\":59,\"Soil_moisture\":14,\"Ambient...}	json	a few seconds ago
status	{\"Temperature\":8,\"Soil_moisture\":73,\"Ambient_...}	json	a few seconds ago

## USN-27

## NODE-RED INSTALLATION

IBM Cloud

Search resources and products...

Catalog

Manage

RANGA KRISHNA PRA...

?

Resource list / App details /

Node RED WOTXV 2022-11-13

Add tags

Actions...

Details

App URL	<a href="https://node-red-wotxv-2022-11-13.eu-gb.mybluemix.net">https://node-red-wotxv-2022-11-13.eu-gb.mybluemix.net</a>
Source	<a href="https://eu-gb.git.cloud.ibm.com/1904106ece/NodeREDWOTXV...">https://eu-gb.git.cloud.ibm.com/1904106ece/NodeREDWOTXV...</a>
Resource group	Default
Deployment target	Node RED WOTXV 2022-11-13
Created	11/13/2022

Services

Cloudant

Open dashboard

Documentation

API reference

Credentials

Connect existing services

Create service

Deployment Automation

Name	NodeREDWOTXV2022-11-13
Location	London
Tool integrations	

Delivery Pipelines

Name	ci-pipeline
Status	Success

Name	pr-pipeline
Status	No stages detected

Getting started quickly

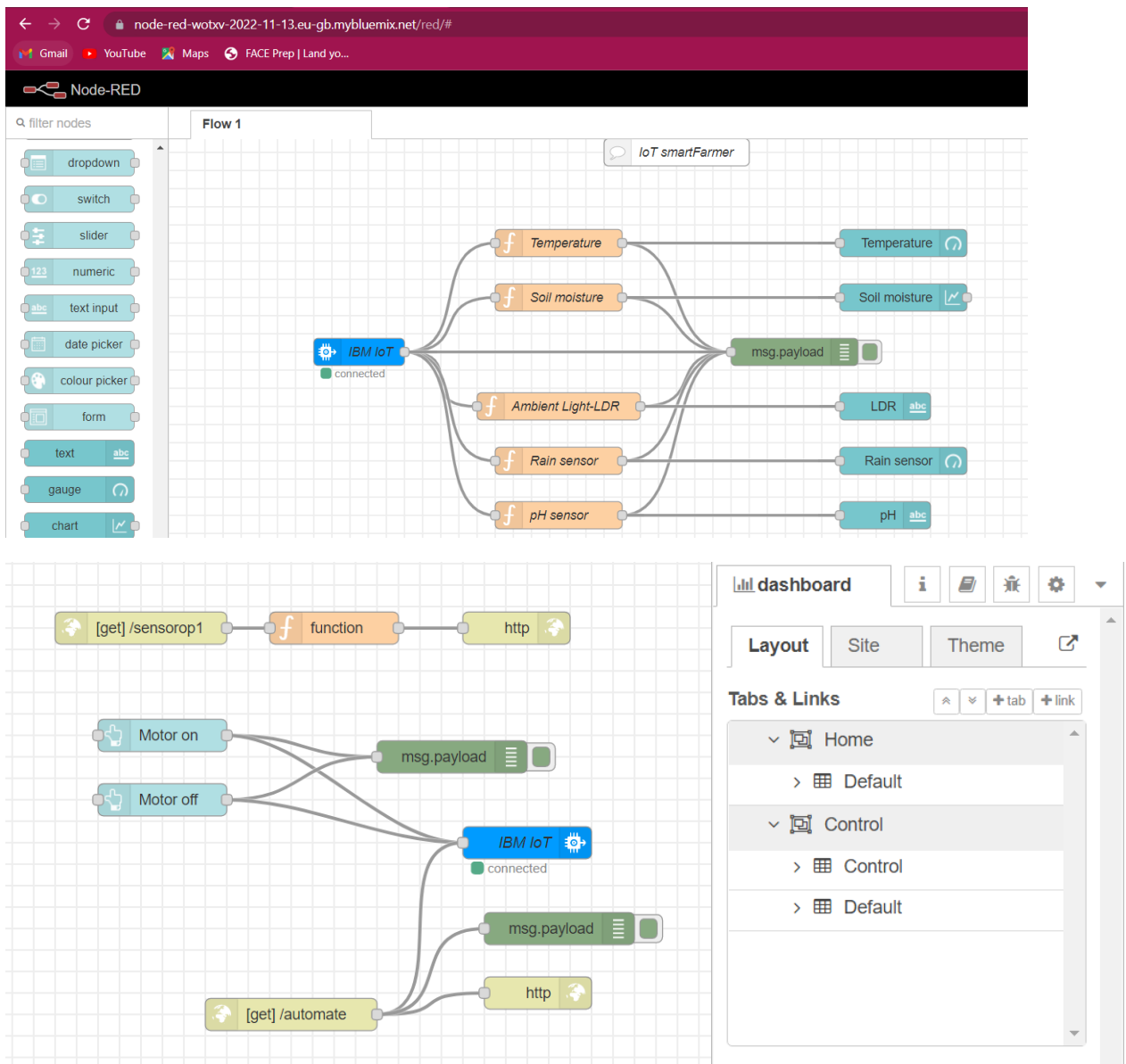
To connect services and DevOps toolchains to your app:

- Use the **Services** card to connect a service to your app. Select an existing service instance, or create a new one. [Learn more.](#)
- If you want to view the code before your app is deployed, click **Download code** to obtain the .zip file.
- Click **Deploy your app** in the **Deployment Automation** card to select the deployment target and configure the Continuous Delivery service. The deployment begins automatically.
- After the deployment begins, you can view the status of the deployment, modify your app, view your repo, or view the app's URI.

ASK A QUESTION



## NODE-RED SERVICE SETUP



## NODE RED OUTPUT

node-red-wotxv-2022-11-13.eu-gb.mybluemix.net/automate?command=Motor\_off

```
{"command": "Motor_off"}
```

node-red-wotxv-2022-11-13.eu-gb.mybluemix.net/sensorop1

```
{"Temperature":44,"Soil_moisture":79,"Rain_sensor":328,"pH_sensor":6,"Ambient_Light_LDR":914}
```

debug

all nodes

all

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : Object

▶ { Temperature: 44, Soil\_moisture: 79, Ambient\_Light\_LDR: 914, Rain\_sensor: 328, pH\_sensor: 6 }

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : number

44

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : number

79

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : number

914

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : number

328

11/18/2022, 12:33:52 AM node: f2f2649a.0d0d98

iot-2/type/Node/id/esp2/evt/status/fmt/json :

msg.payload : number

6