

Sprint Delivery – 1

Project	IoT Enabled Smart Farming Application
Team ID	PNT2022TMID26661
Date	09 November 2022

1. Introduction

The main aim of this project is to help farmers automate their farms by providing them with a Web App through which they can monitor the parameters of the field like Temperature, soil moisture, humidity and etc and control the equipment like water motor and other devices remotely via internet without their actual presence in the field.

2. Problem Statement

Farmers are to be present at farm for its maintenance irrespective of the weather conditions. They have to ensure that the crops are well watered and the farm status is monitored by them physically. Farmer have to stay most of the time in field in order to get a good yield. In difficult times like in the presence of pandemic also they have to work hard in their fields risking their lives to provide food for the country.

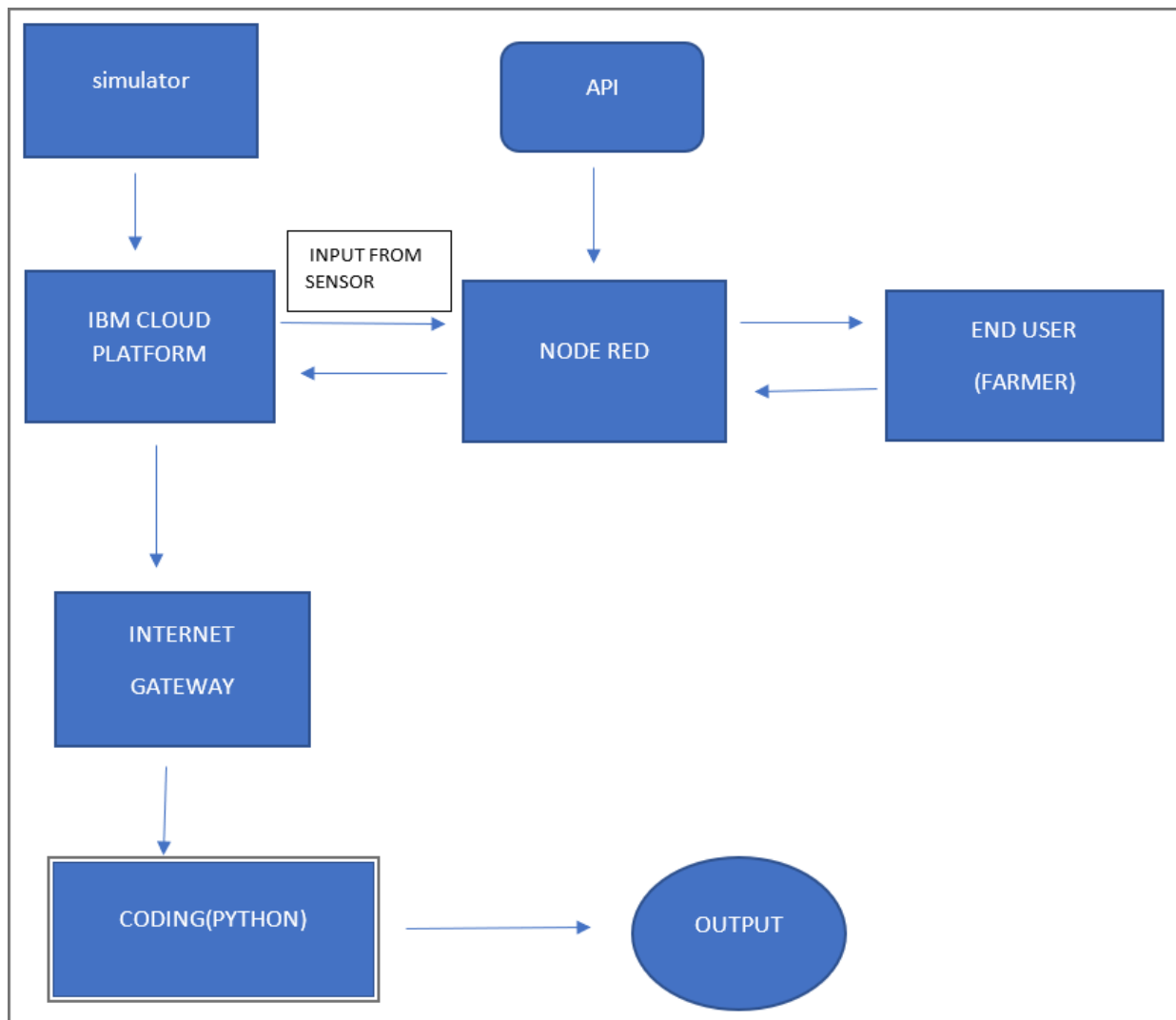
3. Proposed Solution

The main aim of this project is to help farmers automate their farms by providing them with a Web App through which they can monitor the parameters of the field like Temperature, soil moisture, humidity and etc and control the equipment like water motor and other devices remotely via internet without their actual presence in the field.

4. Theoretical Analysis

4.1 Block Diagram

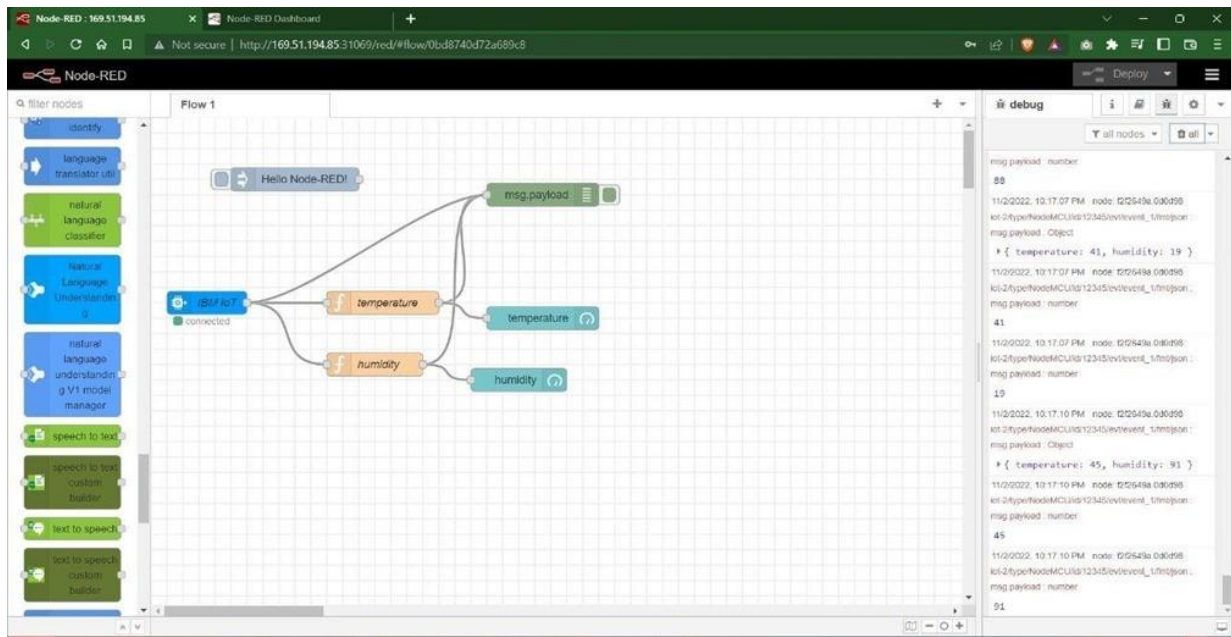
In order to implement the solution , the following approach as shown in the blockdiagram is used



4.2 Required Software Installation

4.2.A Node-Red

Node-RED is a flow-based development tool for visual programming developed originally by IBM for wiring together hardware devices, APIs and online services as part of the Internet of Things. Node-RED provides a web browser-based flow editor, which can be used to create JavaScript functions.



Installation of IBM IoT and Dashboard nodes for Node-Red :

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various platform features. The main content area shows a table of devices with columns for Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. A device with ID 12345 is highlighted, and its details are shown in a modal window below the table. The details include Device ID, Device Type, Date Added, Added By, and Connection Status.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Connected	NodeMCU	Device	Oct 30, 2022 6:37 PM	

Device Details:

- Device ID: 12345
- Device Type: NodeMCU
- Date Added: Oct 30, 2022 6:37 PM
- Added By: 19ec138@psgitech.ac.in
- Connection Status: Connected
- Connection Time: Nov 16, 2022 2:48 PM
- Client Address: 103.224.33.130 SecureToken

The screenshot shows the IBM Cloud 'Internet of Things Platform-3v' service page. The page features a 'Let's get started with IBM Watson IoT Platform' section with a 'Launch' button. Below this, there is a 'Ready for the next level?' section titled 'IBM Watson IoT Platform Journey' which lists three service plans: Lite, Non-Production, and Production. Each plan includes a brief description and a list of features.

Let's get started with IBM Watson IoT Platform

Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.

[Launch](#) [Docs](#)

Ready for the next level?

IBM Watson IoT Platform Journey

- Lite**
The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.
 - Free
 - 100 MB data storage limit
- Non-Production**
The Non-Production service plan is a full-featured, fully-integrated offering that enables you to explore Watson IoT Platform to see how the service can fit into your IoT environment.
 - Starts at \$500 per month
 - Supports device-based authentication
- Production**
The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.
 - Includes IBM Service & Support
 - Private-based, on-premises deployment