Project Report

Topic:
Smart Agriculture System based on IOT

Presented By
Dhara Karamchandani

1. Introduction

1.1 Overview

What do we have today?

The farmers have to be present at their fields whenever it's the time to irrigate their fields and crops. This can be tedious as different crops require different amount of irrigation and moreover, the farmers may have to be present many times a day to irrigate their fields.

Project Objectives:

Smart Agriculture System based on IoT should monitor soil moisture and climatic conditions to grow and yield a good crop.

Project Deliverables:

- Farmer is provided a mobile app using which he can monitor the temperature, humidity and soil moisture parameters along with weather forecasting details.
- Based on all the 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/web application from anywhere.

1.2 Purpose

For the nation to develop agriculturally, the traditional approach should be replaced by new technical advancements. The farmers should be able to enjoy the pleasures offered by technologies, and thus yield better amount and quality of agricultural products.

2.Proposed Solution

We are using IBM cloud IOT service.

Node Red is used for the UI development.

Open Weather API is used to get the weather details of a city, such as Wind and pressure details.

Soil moisture, humidity and temperature parameters are sent using the IBM sensor. It is connected to the IOT device created and registered in IBM cloud. The device receives stimulations and those are shown on the web application using a gauge representation.

A http request is sent through the Open Weather API, which sends a JSON response including the wind, pressure and other weather information.

The below images show the working of application:

This is the tab of web app which represents the value of parameters temperature, humidity and soil moisture.
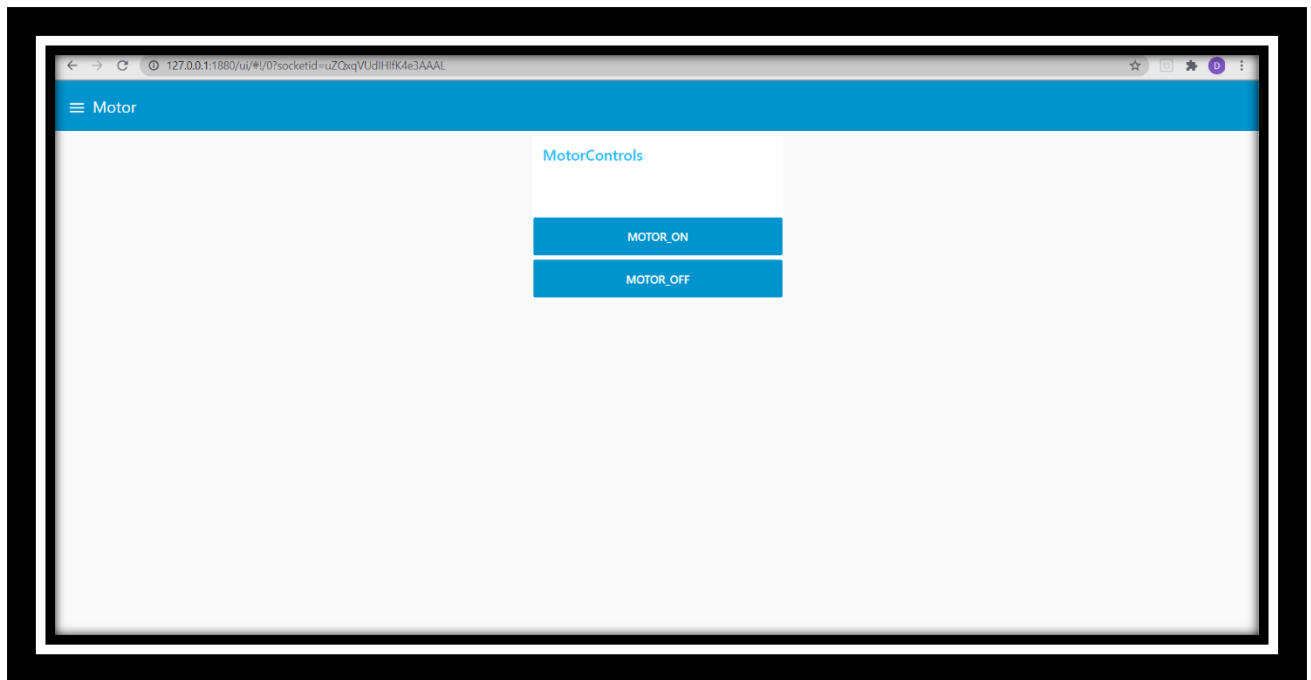
This is the tab of web app which allows the user to switch the motor on and off using the given buttons.

The button clicking events are received as commands through the python code, as shown in the below image.

The above image shows the tab displaying weather details fetched via Open Weather API.

3.Conclusion

This application has been designed using IOT. It can help solve so many issues faced by farmers. The easy to use User Interface provided by Node Red makes the web app much more comfortable to use.