

1. INTRODUCTION

1.1 Overview

This project is being done to create a smart agriculture system based on the concept of Internet of Things. We will connect various hardware and APIs to an app to ensure the working of this system.

1.2 Purpose

The purpose of this project is to use various techniques; which will be mentioned clearly later; to develop an app which will allow the farmer to monitor various parameters (such as temperature, weather, soil moisture, etc) and take suitable actions (such as watering the crops) without being in situ.

2. LITERATURE SURVEY

2.1 Existing problem

Farmers currently have to monitor the crops and the weather manually. Due to this, a lot of hardships might occur, which may result in undue stress on them. The weather may change abruptly too, hence the farmer may not know when to turn on the motors to water the crops.

2.2 Proposed solution

The solution proposed is to simply have a smart agriculture system. It will monitor the required variables using sensors. Using the app, the farmer can turn on or off the motor as he wishes.

3. REQUISITES

-> IBM Cloud Watson IoT Platform

-> Node-Red

-> Sensors (Temperature, Humidity, etc)

or

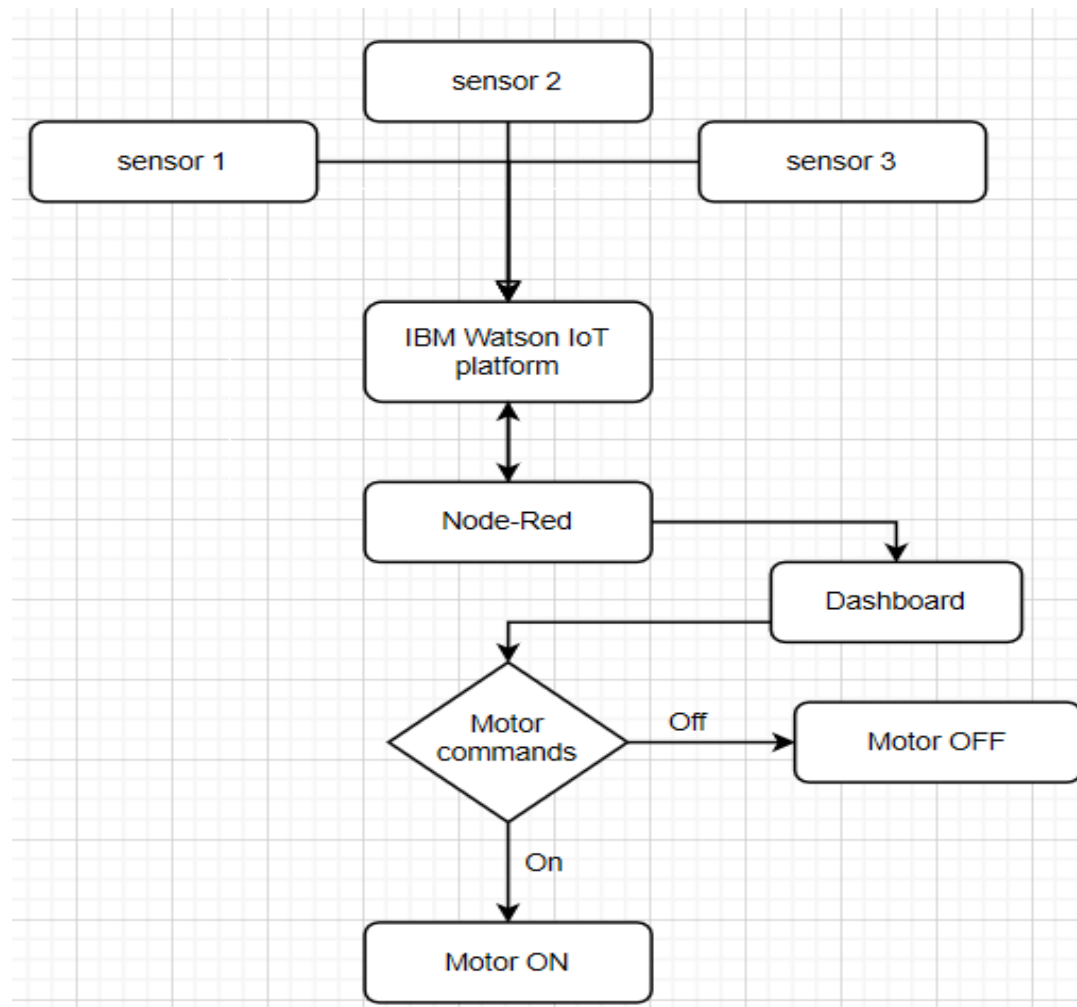
-> Sensor Simulator (IBM IoT simulator)

-> Python IDLE

4. WORKING

Smart Agriculture System is made by first creating an IBM cloud account and accessing Watson service in it. A device is created so that it can receive the data which is sent by the IBM sensor simulator. The sensor simulator contains parameters like temperature, humidity and soil moisture. Then the data which is received by the IBM cloud is sent to the Node-Red. A flow is built in Node-Red by using nodes to create a dashboard displaying all details. Weather API gives us the information of the weather in a particular region. This is also induced in the flow of Node-Red and is displayed in the dashboard. Finally a python code written to subscribe to IBM IOT platform and get the commands when the motor ON or motor OFF button is clicked on the dashboard.

5. FLOWCHART



5. RESULT

A 'Smart Agriculture System' is implemented successfully, allowing the farmer to reduce the workload and also to monitor the farm. It also allows him to check the weather conditions in that area.

In the future, with a few changes, we can automate the whole system, allowing automated watering of crops based on the parameters.