Introduction

Around 70% of Indian population depends on cultivation and moreover many of the crop cultivation are contributed from here. Most of the cultivation cannot be productive only by physical activities so have to be handled by innovative technologies. In this method, we utilize IoT ideas to address certain essential whch deals with critical parts of cultivating.

In this modern world, most of the farmer lack proper knowledge regarding farming and agriculture making it more erratic. Most part of farming and agricultural related activities are based on prediction and forecasting. When it fails, the farmers have to bear huge losses

Overview

In this project we are building a smart farming system using internet of things. With the help of this project, a farmer can maintain without the involvement of excessive involvement of humans.

In this method, we will utilize the latest IoT technologies to build a real-time monitoring system for the farmers. It will provide data such as teemperature, humidity and sol mositeure to the farmers so that the farmers can adjust his field conditions and accordingly.

Purpose

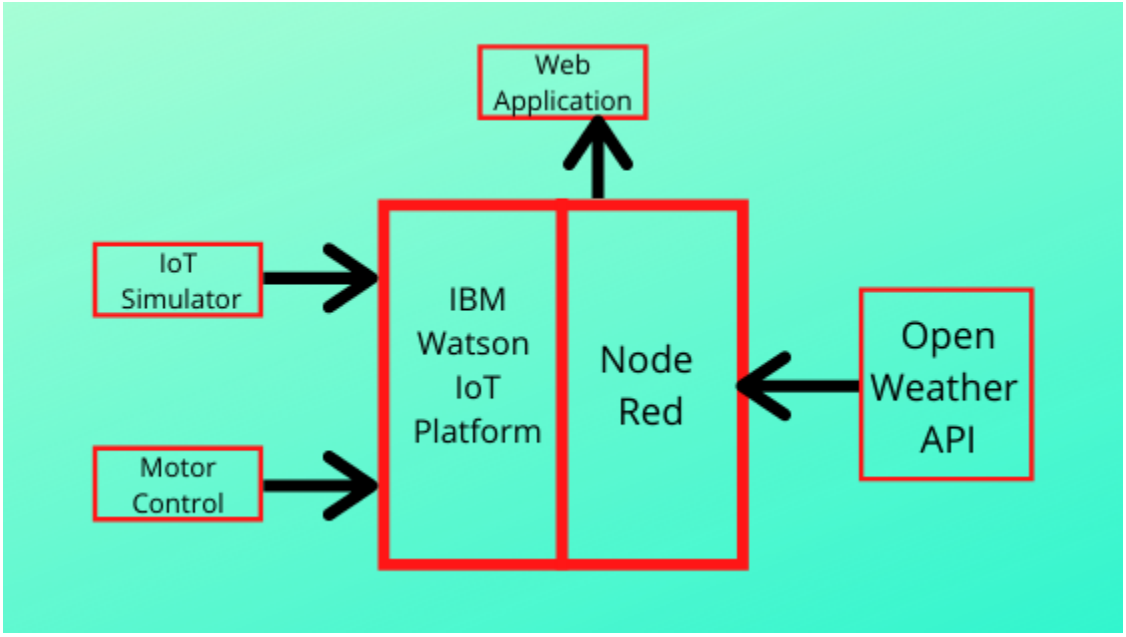
This project will help the farmer to increase the quantity and quality of there goods & also make farmer to manage there field from anywhere .

Theorotical Analysis

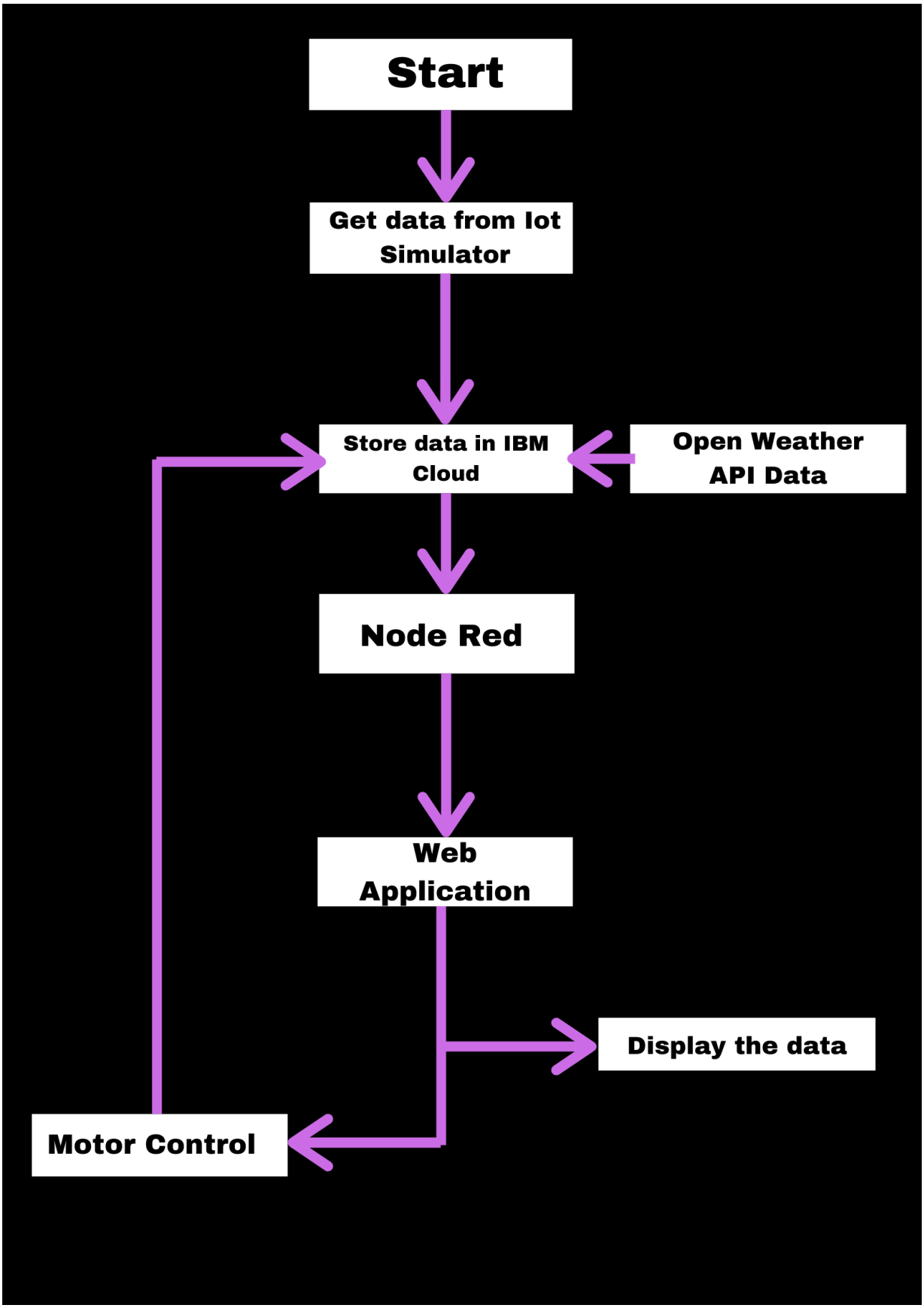
- Firstly we will create a device in IBM Waston IOT platform.And connect this device to the waston IOT sensor simulator which will act as the sensor data in our project.
- In the recent events we can see the sensor stimulator will start sending the data to the cloud platform .
- Then we will configure the node red to separate the different parameters of the iot sensor stimulator.
- Create an open weather API account and install its nodes in the node red.After this we will use HTTP request node to get real time weather data from open weather API's per our requirement and separate the required parameters from weather data.

- Create some button nodes which will be used as motor buttons , connected to another device in the IBM waston IOT platform.
- Then with the help of python code we will configure the button to send notification when they pressed.
- At the end ,to show the real time data in the node red Ul dashboard we will connect all the parameters with the dashboard nodes.
- All the data will be visible in the web application .The web application will also have two motor buttons which can switch off and on the motor

Block Diagram



Flow Chart


Start
Get data from Iot Simulator
Store data in IBM Cloud
Open Weather API Data
Node Red
Web Application
Display the data
Motor Control

Application of IoT in farming

Using IoT concept in agriculture field will help farmers not only reduce waste but also increase in yield production varying from the quantity of fertilizer utilized to the quality of the production achieved.

These days IoT has also been implemented in these following practices.

1. Crop Monitoring

Using IoT technique we can monitor the quality of crop which thus increase the food production. It introduces the use of appropriate method into agriculture sector and better crop production by collecting real-time quality of crop and informing farmers about their crop growing status.

2. Precision Farming

Precision farming is a farming practice that are more accurate and controlled. It deals with production of crop along with raising livestock. In this farming techniques, we use component such as SN, system control, robots, autonomous vehicles, automated hardware. Such as crop metrics

3. Green Agriculture

This technique uses control mechanis4.m technique for environment parameters. To control environmental factors for a smart greenhouse, we use different sensors that contribute to environment parameters such as soil quality and soil type .

4. Livestock Monitoring

With the help of sensor , health of the livestock can be monitored which will directly help in the yield production of good produced from them.

5. Agricultural drones

It is Is a good example for farming and inorder to improve the various agricultural practices, drones are used.

Advantages

- Water Conservation
- Weather predictions and soil moisture sensors allow for water use only when and where needed
- Farmers can visualize production levels, soil moisture, sunlight intensity and more in real time and remotely to accelerate decision making process.
- It will result in better sustainability

Disadvantage

- One huge disadvantage of smart farming is that it requires an unlimited or continuous internet connection to be successful.
- Smart farming makes use of high techs that require technical skill and precision to make it a success. It requires an understanding of robotics and ICT. However, many farmers do not have these skills. Even finding someone with this technical ability is difficult or even expensive to come by, at most.

Project Scope

The future goal for IoT leads in smarter cities. IoT technologies help to improve the quality of life and change cities to better and smarter world.

Given below are some of the main future scopes of IoT:

1. Smart agri-logistic It is all about smart fooding and agri-business. It focuses on servicing fresh product quality and natural production process with flexible chain- and compassing tracking and tracing system.

2. Smart Food Awareness It deals with customer profile, health and awareness and normal days in the future super market. The demand for healthier but enjoyable diet is increasing, so we need to consider and serve it. Therefore we have to develop a system using iot which will aim for creating awareness in food quality

3. Smart Farming Using data mining and big data analysis, we can collect data for different parameter helping us to answer which crops are better suited for this particular places and which season. Using sensors and device on the livestock can maintain the health which directly benefit farmers.