Phase – I Smart Farming Using IOT – Proposed Solution

Team Details:

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INTRODUCTION:

This smart farming project is in trending nowadays because it can reduce the manpower in farming and secondly it is an automatic system so you don't need to interfere in it. The land where the vegetation is been cultivated will be monitored continuously regarding the moisture and the soil temperature. All this will be automated such that there will be no human intervention.

NOVELTY AND INNOVATION:

This farming technique helps the farmers cherish their crops in a good manner. They will be able to reduce the manpower required for their work in the land. When the crops start to grow, they need to irrigate the land regularly to maintain the moisture. They need to either look on it or get in the land to find out whether the field is moisturized or not. This tool helps the farmers look after their land as well as their crops with ease.

They just can measure the moisture of the soil with the help of the device and then plan the things that are to be done accordingly. This helps in reducing the time consumption of them in getting to all the parts of the field and finally ending up in a dilemma of what to do next.

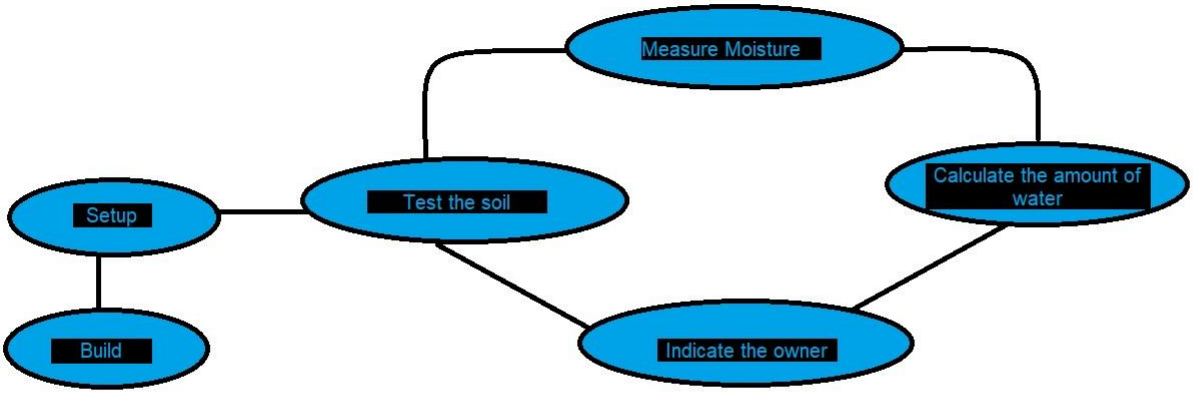
FEASIBILITY OF THE IDEA:

The equipment’s feasibility is very affordable and can be owned by all of them. The approximate cost for setting up this is around 1029.08 INR. This is available for all and can be set up by all.

SOCIAL IMPACT:

The work burden on the farmers is reduced and even the crops are protected for over irrigation that often leads to decay of the crops. The farmers will be indicated on the amount of water that the land must be irrigated with to avoid adverse effect on the crop’s growth.

BUSINESS MODEL:



EXISITING PROBLEM:

The agricultural land infested with crops must be irrigated continuously to maintain the crop health. Sometimes the land gets over irrigated that leads to disasters such as crop failure, decaying of crops and even many more. The farmer is unaware of the amount of water to be let into the agricultural field and is unable to determine whether the land is irrigated with sufficient amount of water or not.

SOLUTION FOR THE PROBLEM:

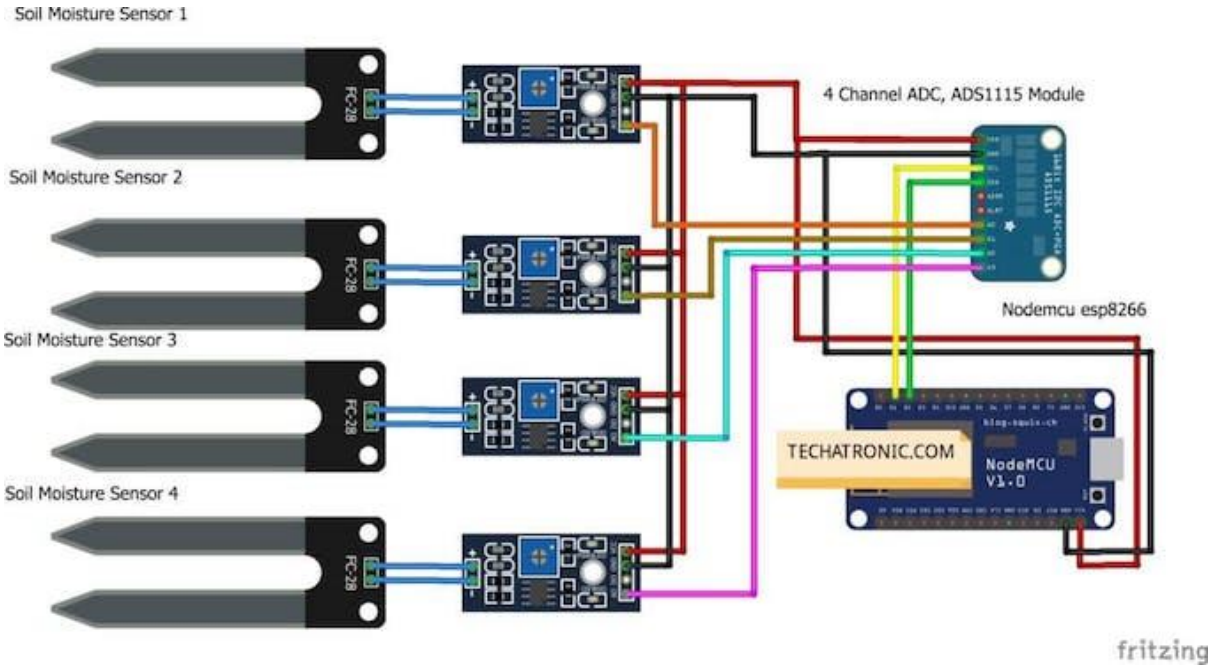
The solution for the problem is that development of a device that helps in determining as well as monitor the agricultural fields. Soil Moisture sensors are placed in the soil all over the agricultural land in specific areas to monitor the soil moisture and indicate it to the farmer. The amount of water to be supplied is calculated in the cloud and then indicated to the farmer. The process is listed as follows:

Components in use:

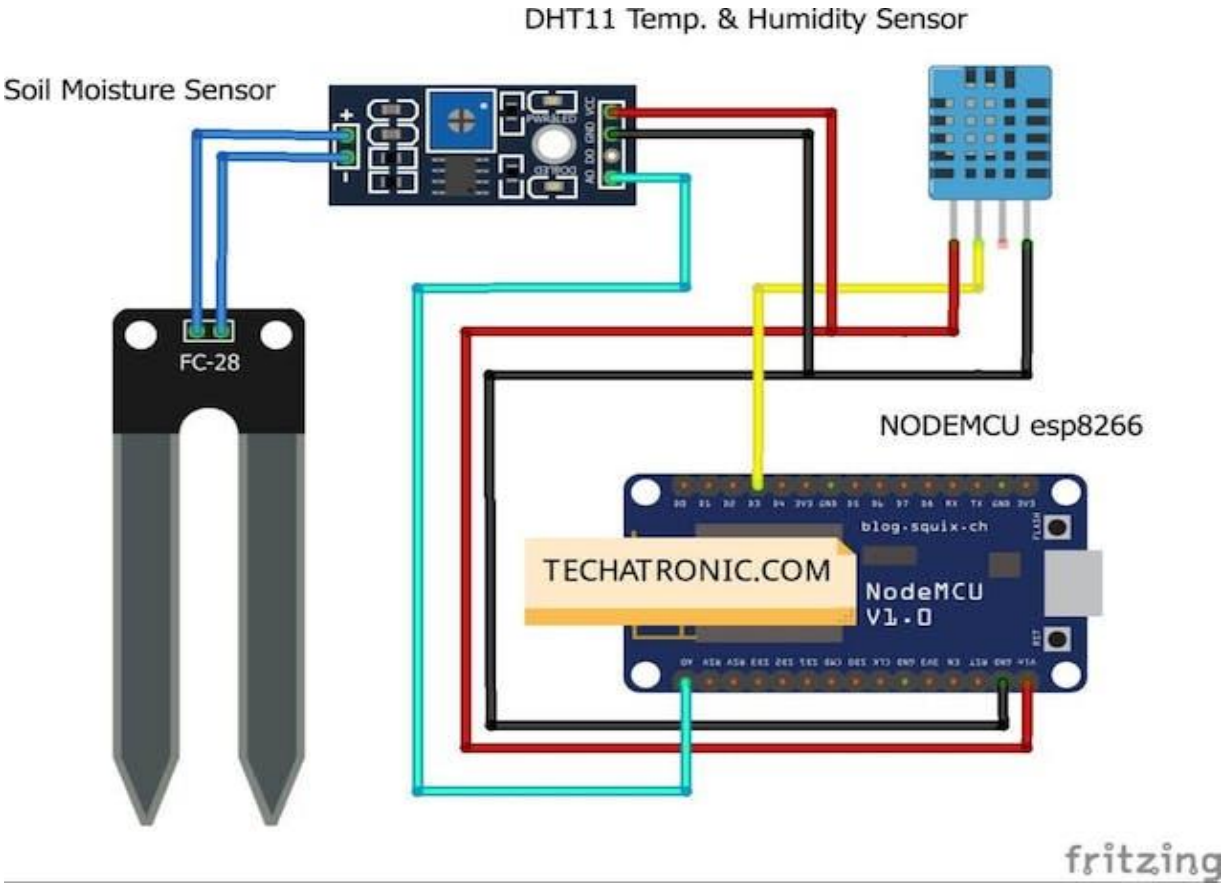
1. NodeMCU(ESP8266) – 2 No.
2. General Purpose PCB
3. 4 channel Multiplexer
4. Soil Moisture Sensor – 5 No.
5. DHT11
6. Connecting Wires & Cables

Circuit Diagrams:

1) For the 1st NodeMCU:



2) For the 2nd NodeMCU:



SOLUTION ARCHITECTURE: