

THE BREAKTHROUGH IN AGRICULTURE...

SMART AGRICULTURE SYSTEM





Meet The Group



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ABSTRACT

- **Agriculture plays vital role in the development of economy in the country. In India about 70% of population depends upon farming.**
- **One of the solution to this problem is smart agriculture by modernizing the current traditional methods of agriculture.**
- **The highlighting features of this project includes smartcontrol and intelligent decision making based on accurate real time field data.**
- **This IOT system for smart agriculture is powered by Arduino and includes a DC motor, GSM module, temperature, moisture, and water level sensors. It notifies the phone via app of the levels. When the water level falls, sensors detect it and a water pump is immediately started and if the temperature rises above a threshold. All of this is demonstrated in IOT.**



INTRODUCTION

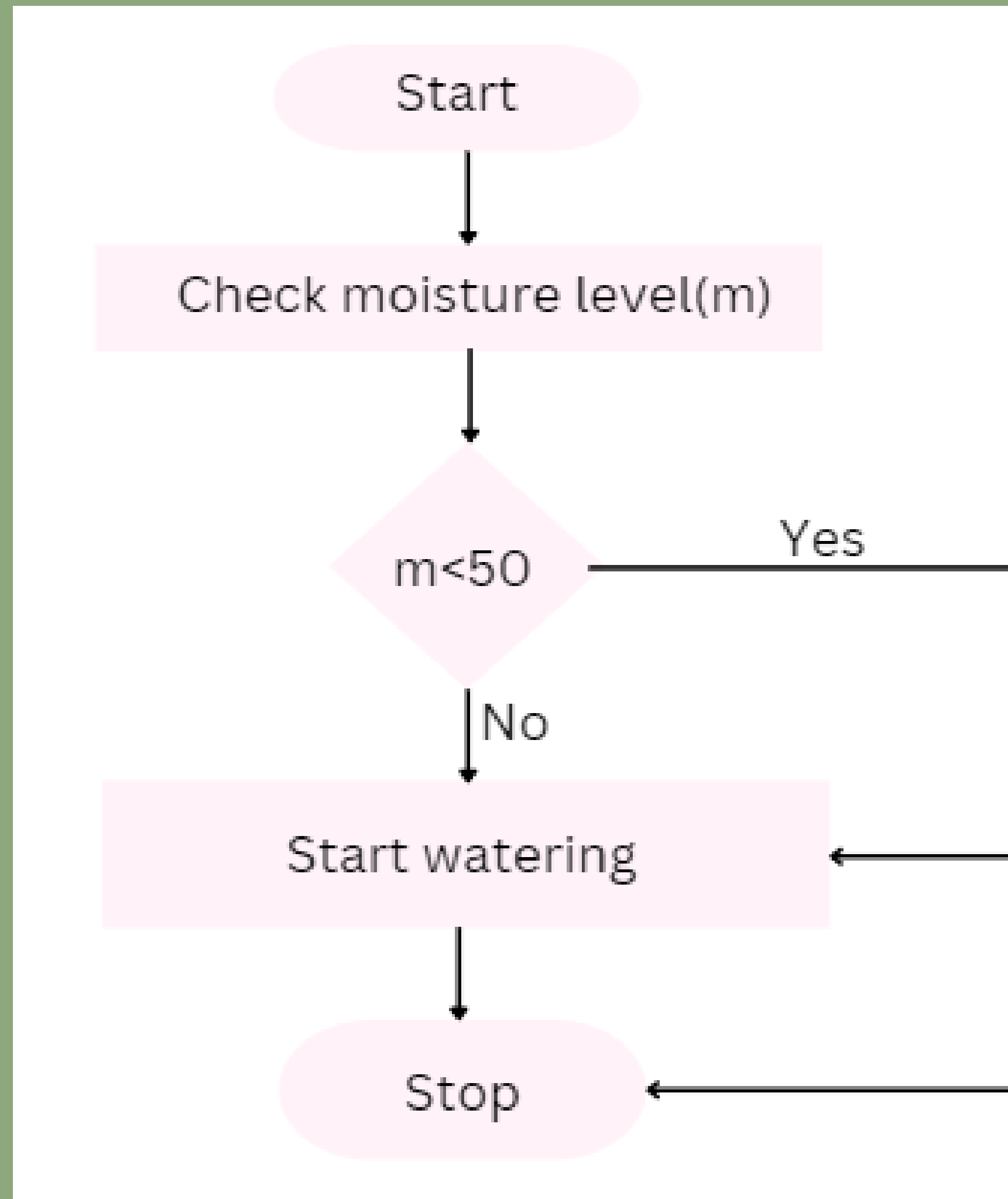
- **Agriculture is the heart of many countries and soil is the main important element of agriculture. There are different soil kinds and each kind has different features for different crops. In this field, now a day's different methods and models are used to increase the quantity of the crops. So the main purpose of this system is to create a model that helps farmers to know which crop should take in a particular type of soil. The model only suggests soil type and according to soil type it can suggest suitable crops. In this, different classifiers are used and according to that the model suggests the crop.**

PROBLEM STATEMENT

This project is inspired to be beneficial for the farmers who work in agricultural areas where they are totally reliant on the rain and bore wells to irrigate their land. Organic farming heavily relies on historical soil health metrics including temperature, pH, and soil moisture. IoT applications can help with irrigation pump management, opening and closing water flow gates, and data logging the state of the soil's health for both the present and the future. Additionally, with the aid of IoT apps, remote farmers may have access to live advise from professionals or experts based on recorded soil health data.

PROPOSED IDEA

WORK FLOW DIAGRAM:





MODULES DESCRIPTION

- **Relay is an important part of this model. They work as interfacing between electronic circuits and mechanical circuits. Basically relay is a switch which is operated by a relatively small amount of electric current. Relays produce a very high voltage when switched off. This will damage the other components in the circuit.**
- **The DHT11 is a basic, ultra low-cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the air surrounding the plant and sends out a digital signal on the data pin.**
- **Water pump is used to provide water whenever needed. It can be controlled by interfacing it to a microcontroller. The water pump is turned ON/OFF by sending signals as required.**

- **Soil moisture sensors measure the moisture content in the soil. The sensor measures the water content indirectly by using properties of soil like, such as electrical resistance and dielectric constant. Technologies used in moisture sensors include neutron moisture gauges, electrical resistance of soil and frequency domain sensors such as capacitance sensors. The moisture sensor is inserted in the soil, in order to measure the moisture content of the soil. If there is less water in the material then less electricity will be generated by the soil which indicates resistance is more, therefore moisture level in the soil is low.**
- **SOFTWARE: Arduino IDE, Blynk App**

COMPARISON STUDY

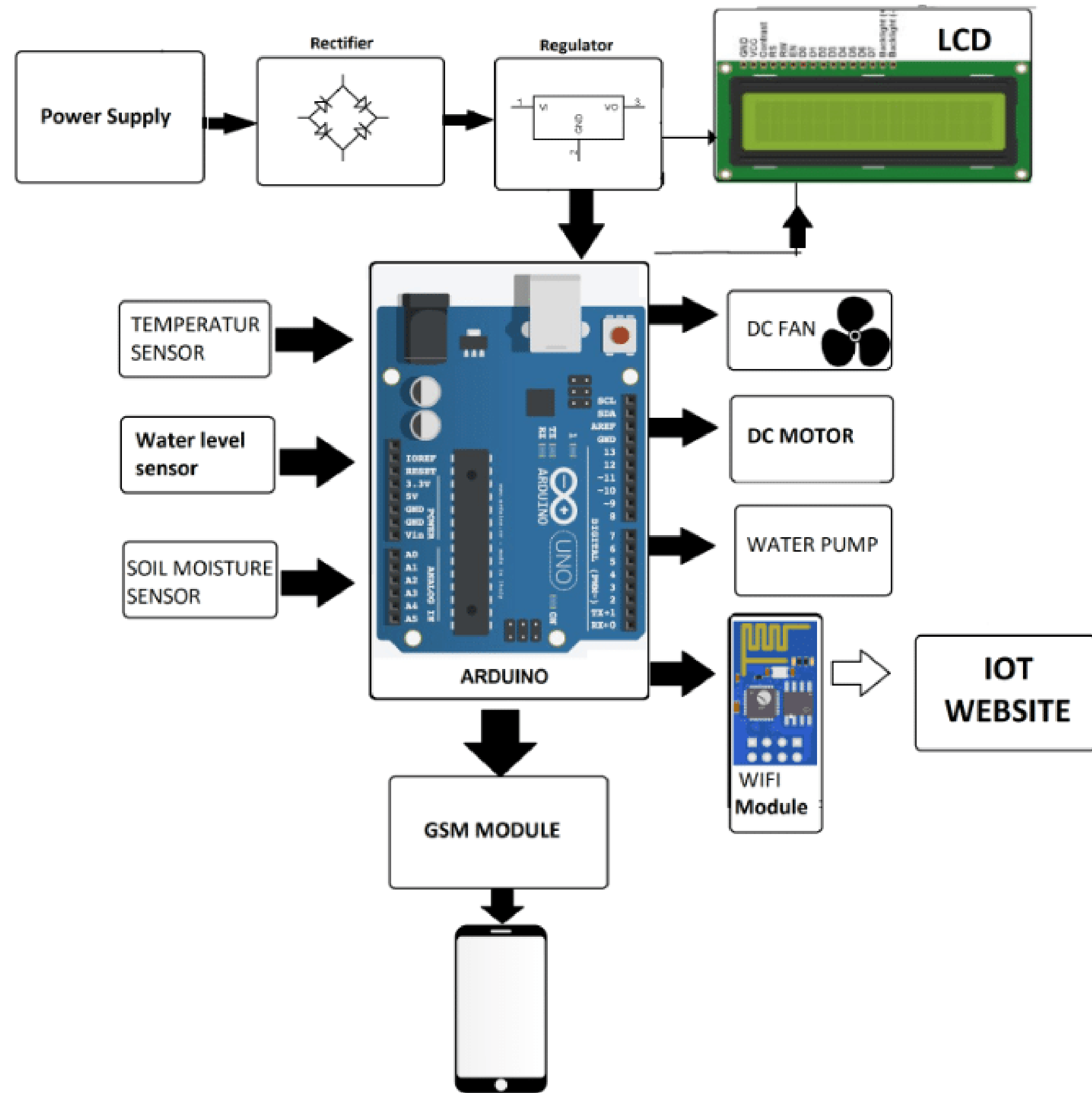
EXISTING SYSTEM:

It only include simple automatic irrigation system using wifi module based on moisture content

PROPOSED SYSTEM:

- Automatic irrigation system using wifi module depending upon the moisture content.
- Mathematical model to give the score to the soil depending upon moisture, ph and temperature to predict which crop can be grown.

ARCHITECTURE AND BLOCK DIAGRAM

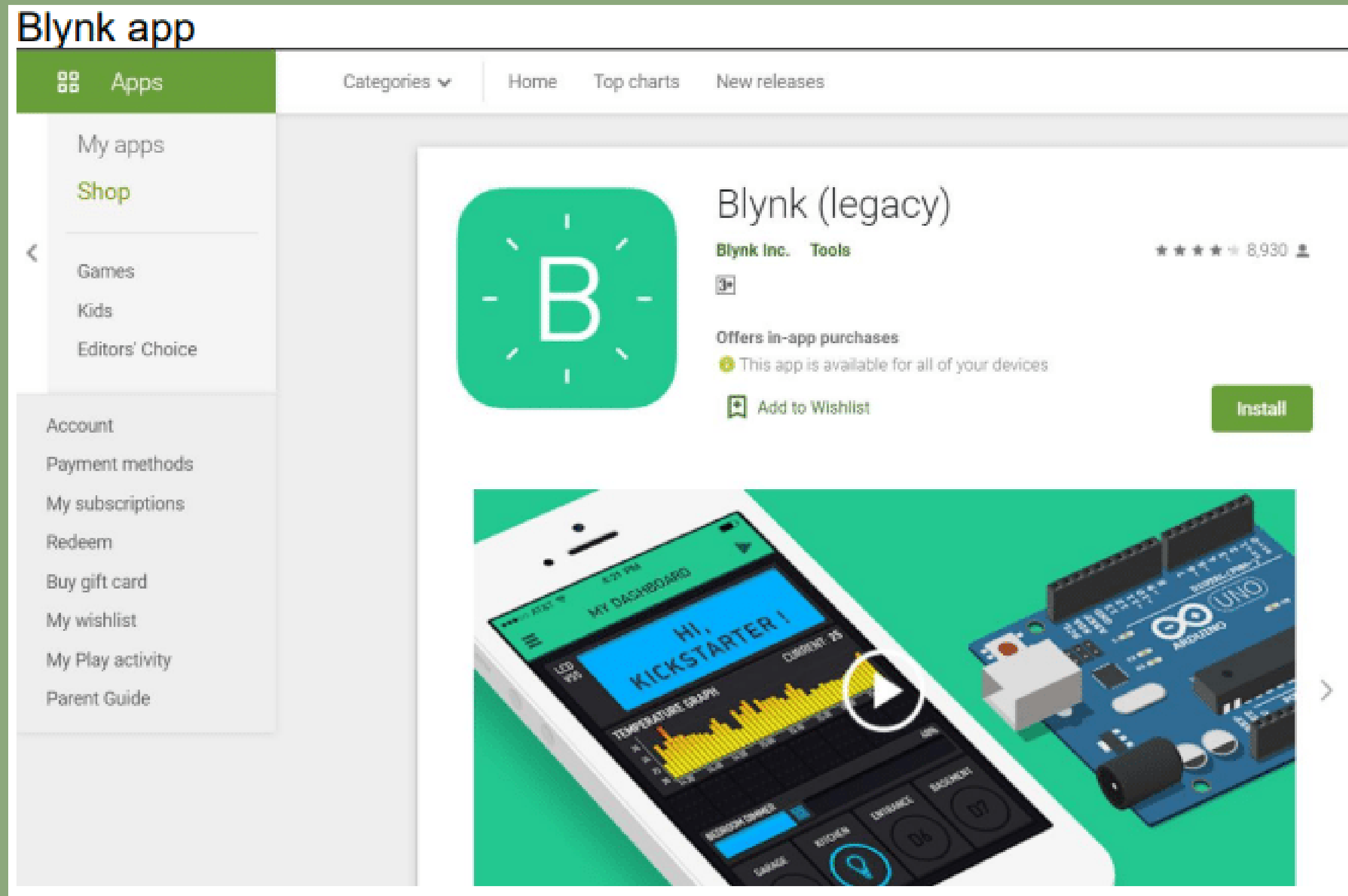


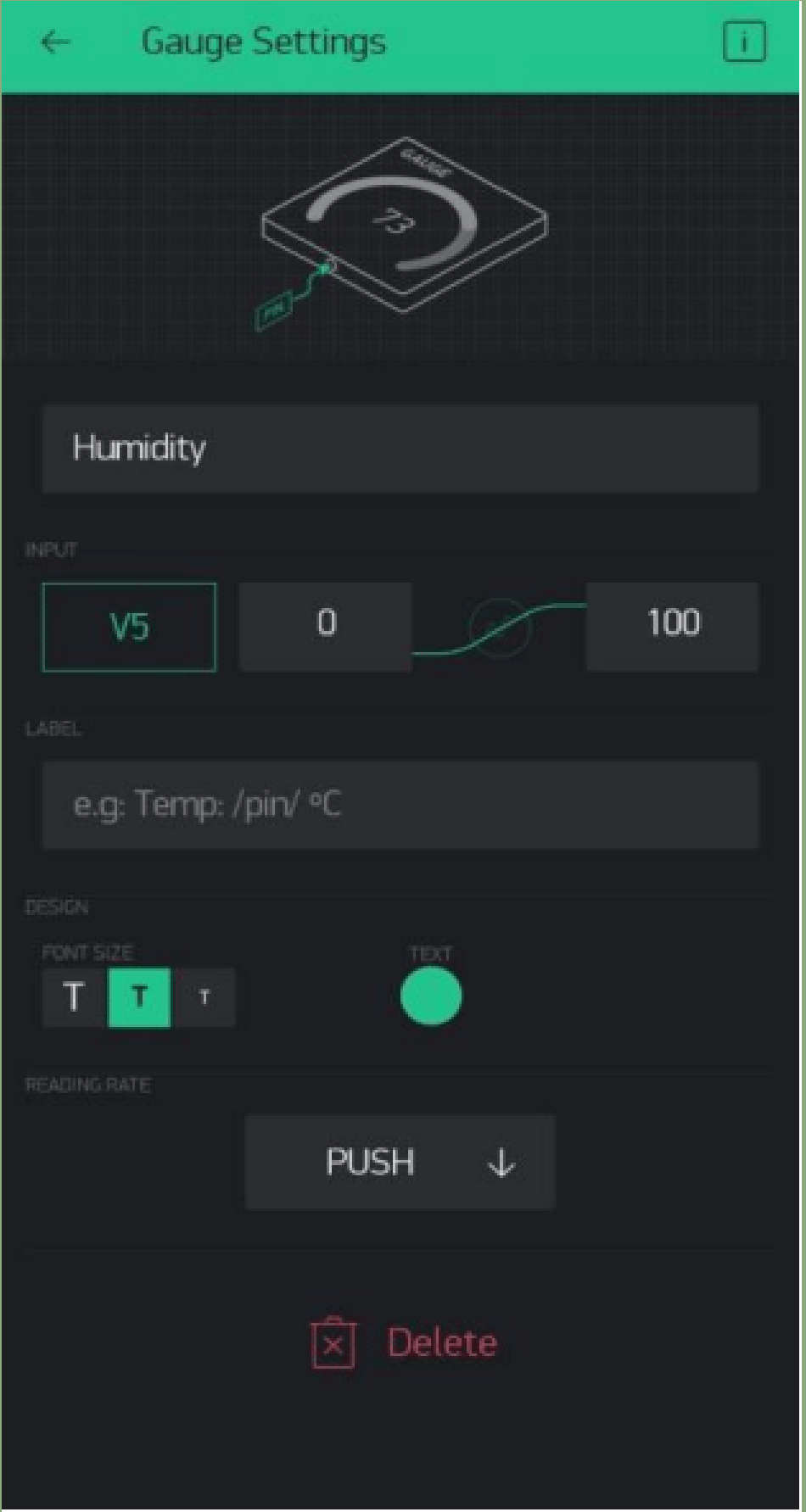
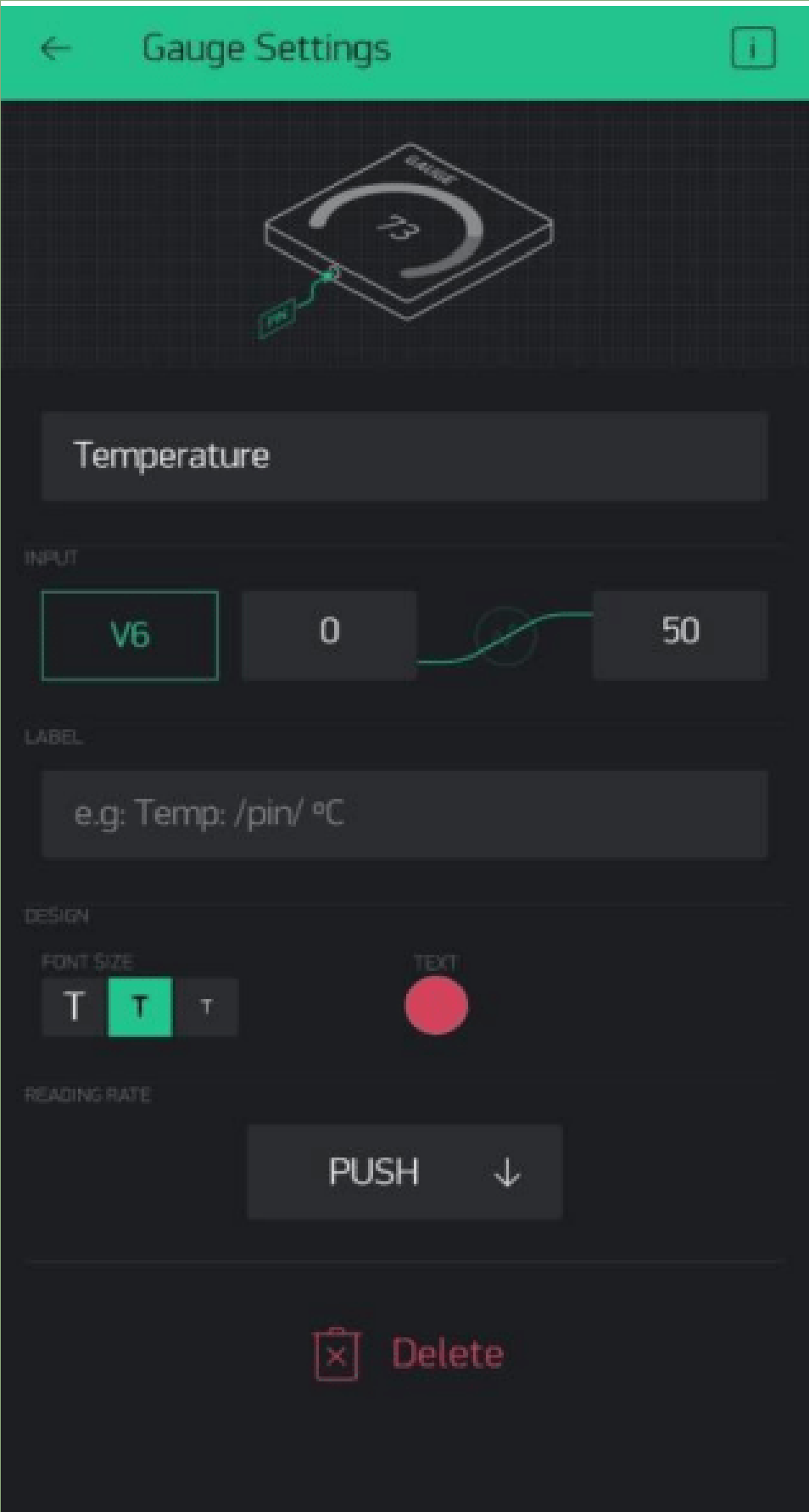
LITERATURE SURVEY

AUTHOR	PROJECT TITLE	REVIEW PROS AND CONS
Yin Yin Nu	Automatic Plant Watering System using Arduino UNO	Used only single sensor and internet of plants is not implemented
Parwinder Singh Bains	Modeling and Designing of Automatic Plant Watering System Using Arduino	Implemented successfully Used only single sensor

SCREENSHOTS


CLIENT SIDE (UI) APP





Gauge Settings

i



Soil Mositure

INPUT

V2

0

100

LABEL

/pin/

DESIGN

PONT SIZE

T

T

t

TEXT

READING RATE

PUSH


↓

Delete



Styled Button Settings

i



Water Pump

OUTPUT

D5

0

1

MODE

PUSH

SWITCH

ON/OFF STATES

OFF LABEL

OFF

ON LABEL

ON

OFF BACKGROUND

ON BACKGROUND

PONT SIZE

T

T

t

EDGES

ROUNDED

SHARP

PILL

STYLE

REFERENCES

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