GOVERNMENT COLLEGE OF ENGINEERING ERODE

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Government College of Engineering, Erode
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

B.E Electronics and Communication Engineering

SMART PLANT MONITORING BY WATER MANAGEMENT SYSTEM

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TECHNOLOGY NAME : IOT BASED SMART PLANT MONITORING BY WATER MANAGEMNENT SYSTEM

INTRODUCTION:

Smart plant monitoring systems can help with water management by providing real-time data on soil moisture levels. This information allows users to optimize watering schedules and prevent over or under watering, which is crucial for the health and growth of plants. By monitoring soil moisture levels, users can ensure that plants receive the right amount of water at the right time, leading to improved water efficiency and conservation. Additionally, alerts or notifications can be sent to users when soil moisture levels are outside of the desired range, allowing for immediate action to be taken. Overall, smart plant monitoring systems play a significant role in water management for plants.

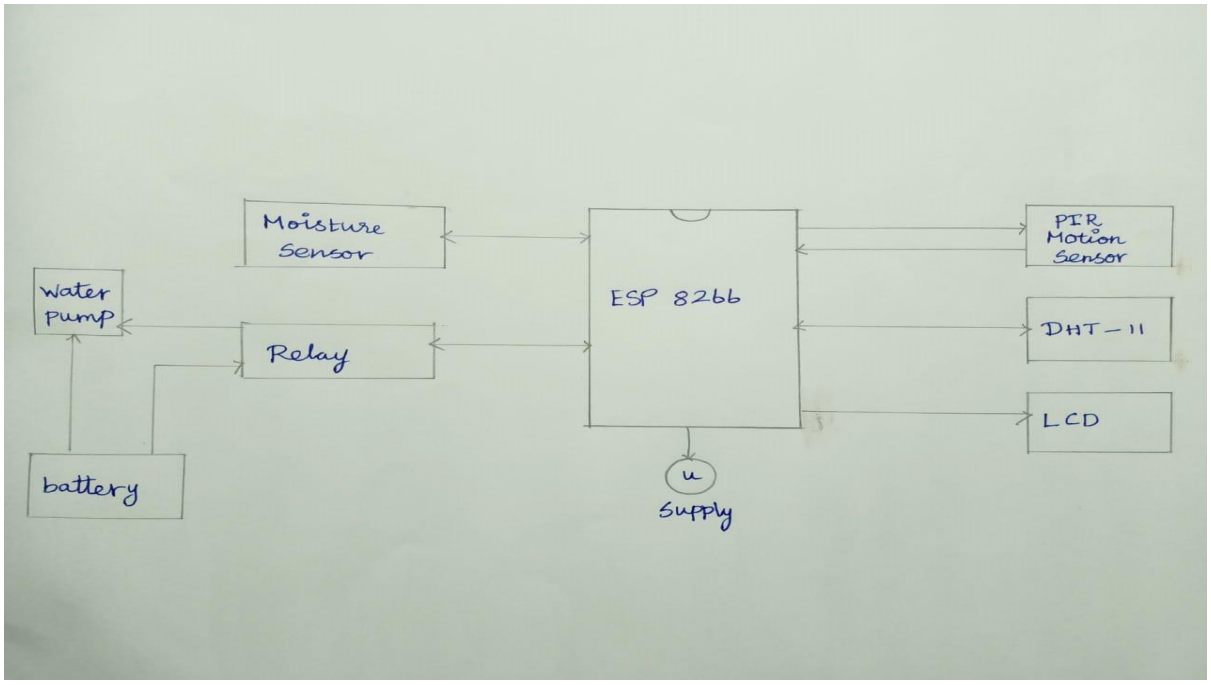
OVERVIEW OF THE PROJECT:

- Smart plant monitoring systems can help with water management by providing real-time data on soil moisture levels. The system is developed based on a web server to monitor and control the soil moisture of vertical farming.
- These system use IoT devices, sensors to collect, process, and analyse data to optimize water usage, prevent over or under watering, and providing real-time monitoring of plant .
- This system provides with **Nodemcu ESP826**, the system manages all electronic components and executes actions based on WiFi network connectivity.
- The Soil Moisture Sensor and PIR Motion sensor it measure the soil moisture content to control water flow.
- The device can operate in automatic mode, with a relay included in the circuit to control the soil moisture by water management. Users can observe and manage the moisture level and mode control functions through the Blynk application, ensuring efficient water usage and conservation.

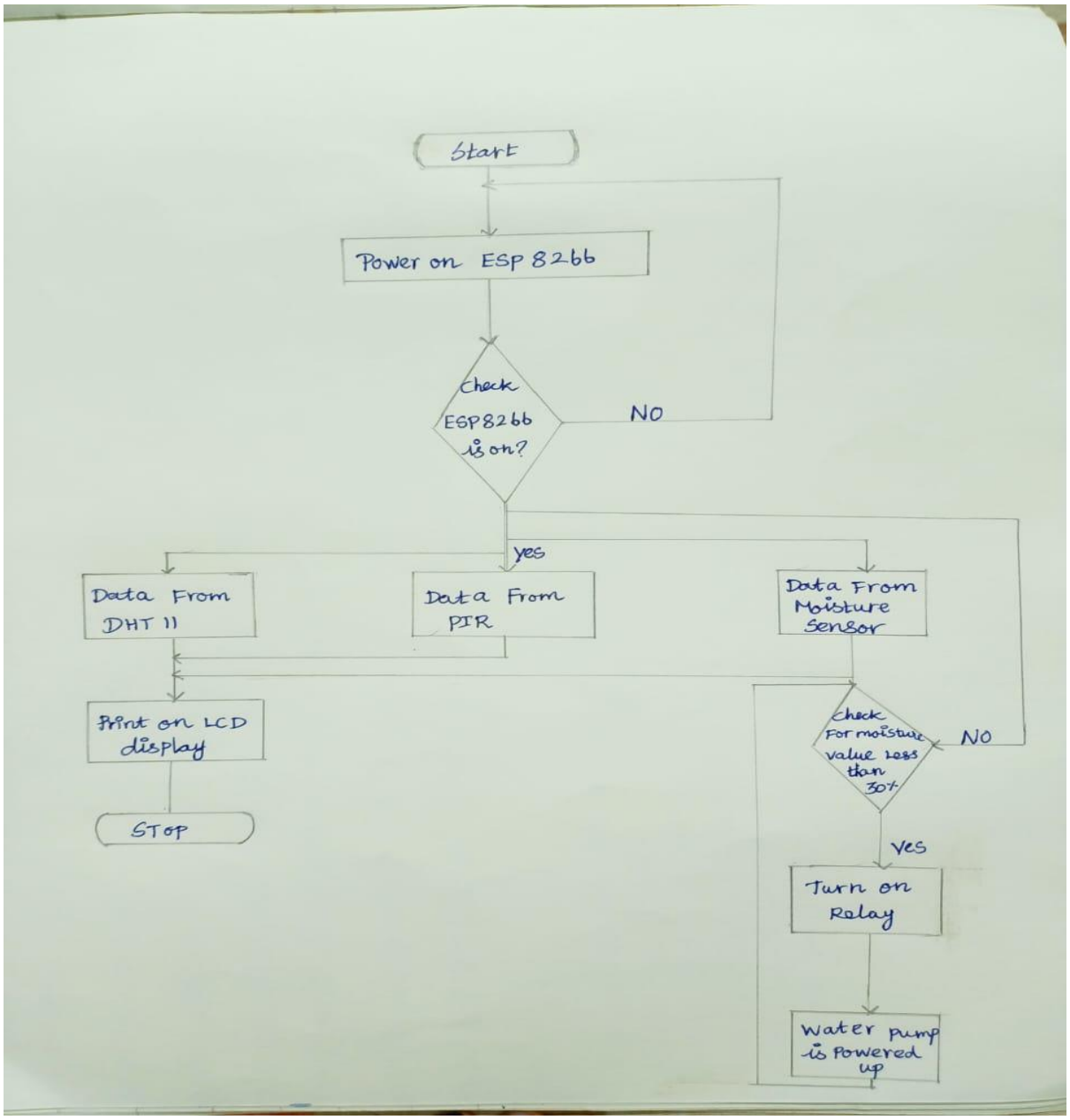
OBJECTIVE:

- The purpose of a smart plant monitoring system is to improve plant health and productivity. By collecting and analysing data in real time, farmers and gardeners can ensure that their plants are getting the optimal conditions they need to thrive. This can lead to increased yields, improved quality, and reduced costs.
- It provides the efficient water usage, real-time monitoring, remote access and customized settings.

BLOCK DIAGRAM:



FLOW CHART:


Start
Power on ESP 8266
Check ESP8266 is on?
NO
yes
Data From DHT 11
Data From PIR
Data From Moisture Sensor
Print on LCD display
STOP
Check For moisture value less than 30%
NO
Yes
Turn on Relay
Water pump is Powered up

HARDWARE REQUIREMENTS:

- Nodemcu ESP8266
- Soil Moisture Sensor
- PIR Motion Sensor
- Relay Module
- BreadBoard
- Jumpers
- 18650 Battery
- Tactile Push Button
- Water Pump

SOFTWARE REQUIREMENTS:

Blynk Application www.blynk.io