Don Bosco Institute of Technology

Department of Information Technology

Project:Irrigation System for Plants

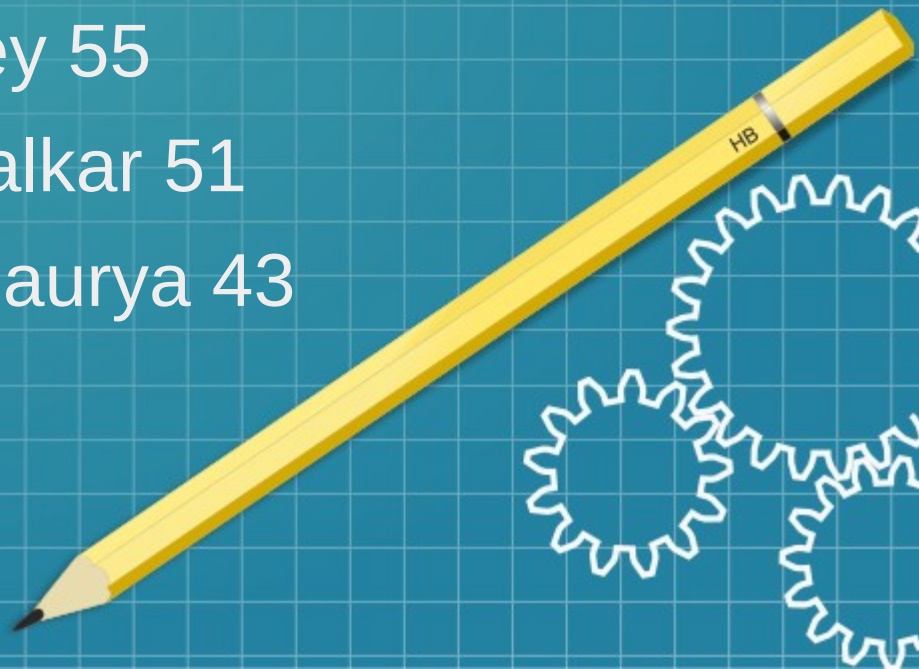
Class:TE-IT

Group Members:

Alok Pandey 55

Nishant Nimbalkar 51

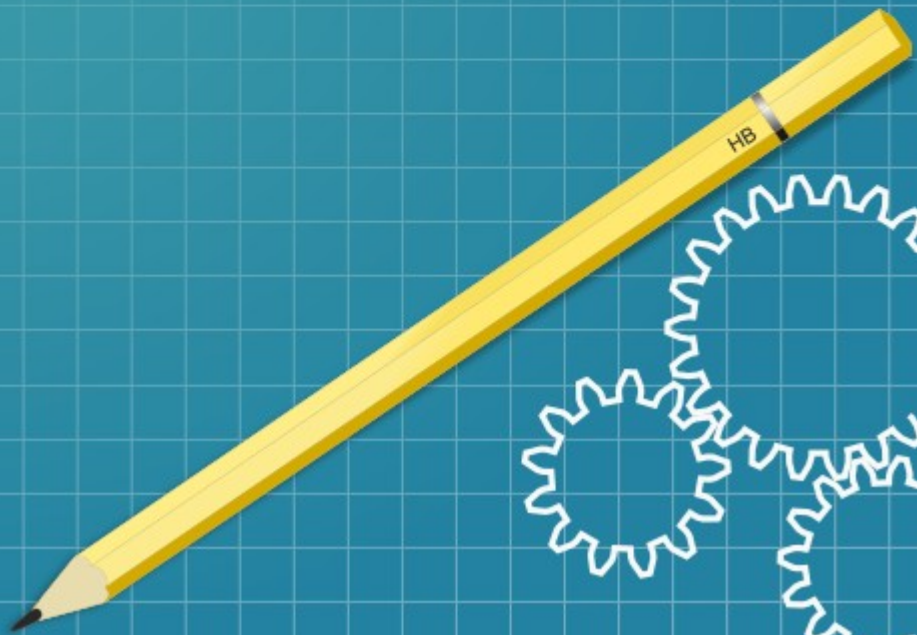
Pawankumar Maurya 43



Outline

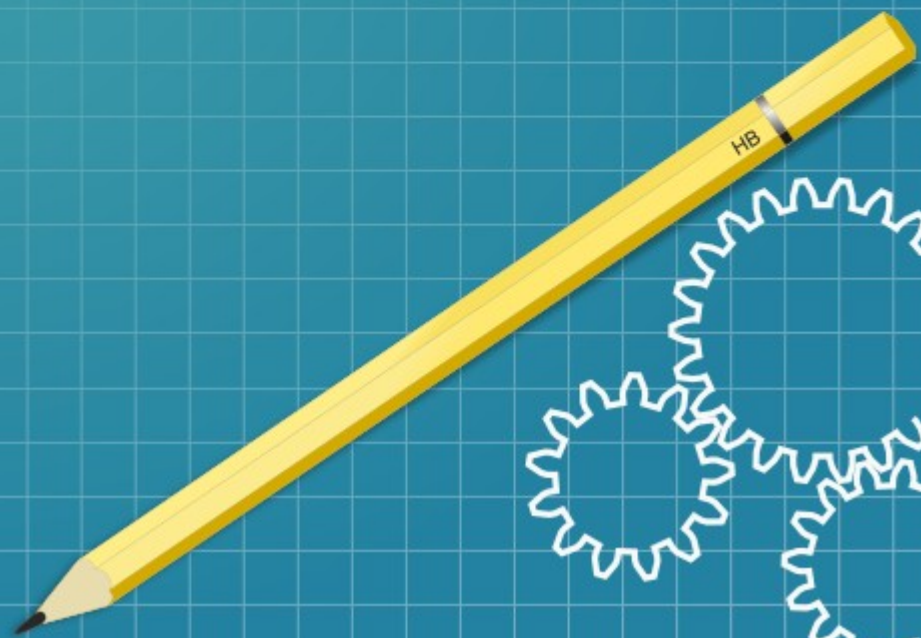
- Introduction
- Problem Statement
- Scope
- Block Diagram
- Circuit Diagram
- Description
- Hardware Requirement
- Budget
- Software Requirement
- Conclusion



Introduction

- According to the Researchers at the University of Georgia and University of Maine, plants need much less water than most people think.
- Whenever we go out of town for few days, we worry about our plants as they need water on regular basis or have to rely on neighbours.



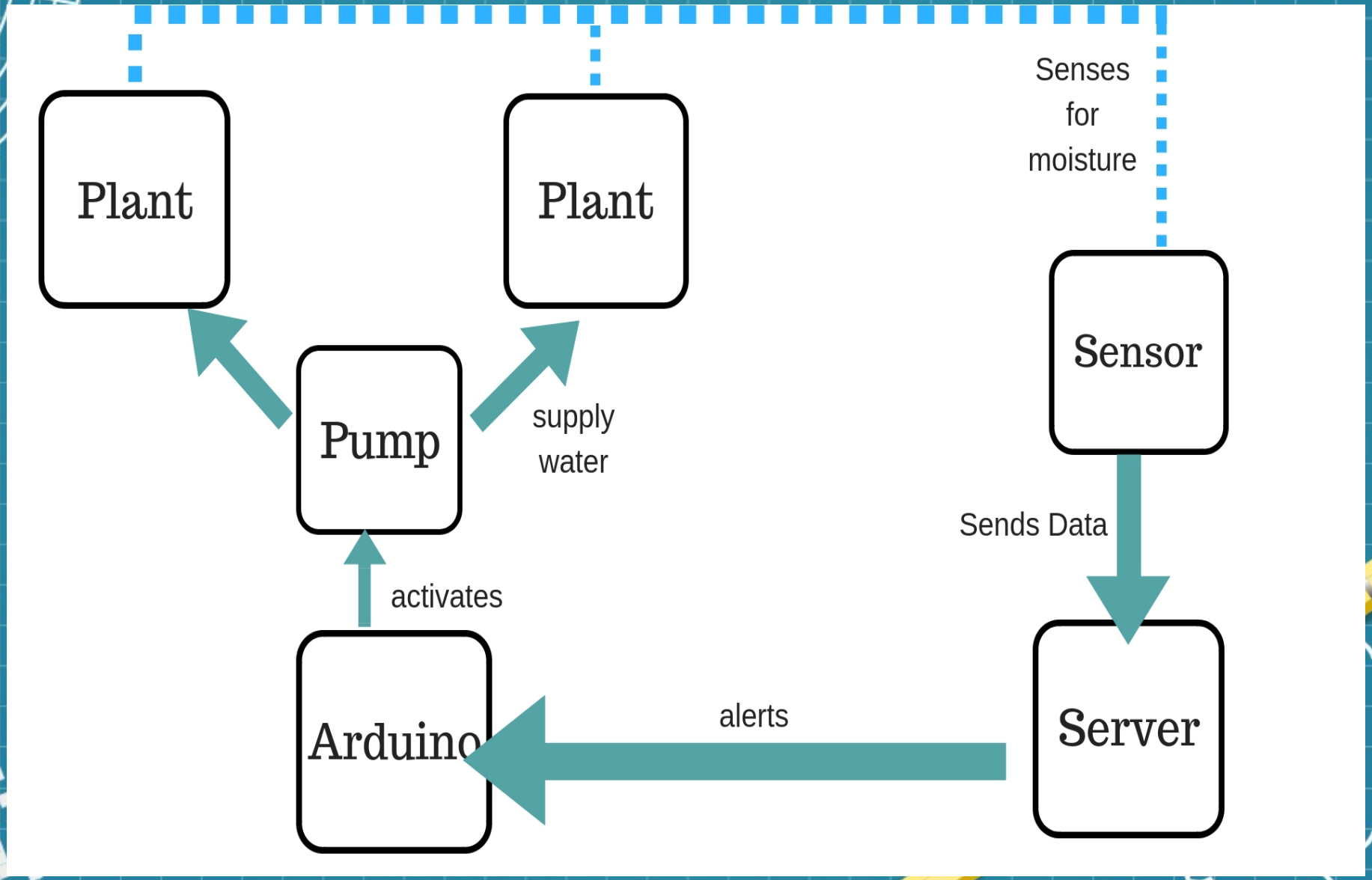
Problem Statement

- While watering the plants people give inappropriate amount of water.
- If a plant's soil has too much water, the roots can rot, and the plant can't get enough oxygen from the soil. If there is not enough water for a plant, the nutrients it needs cannot travel through the plant.

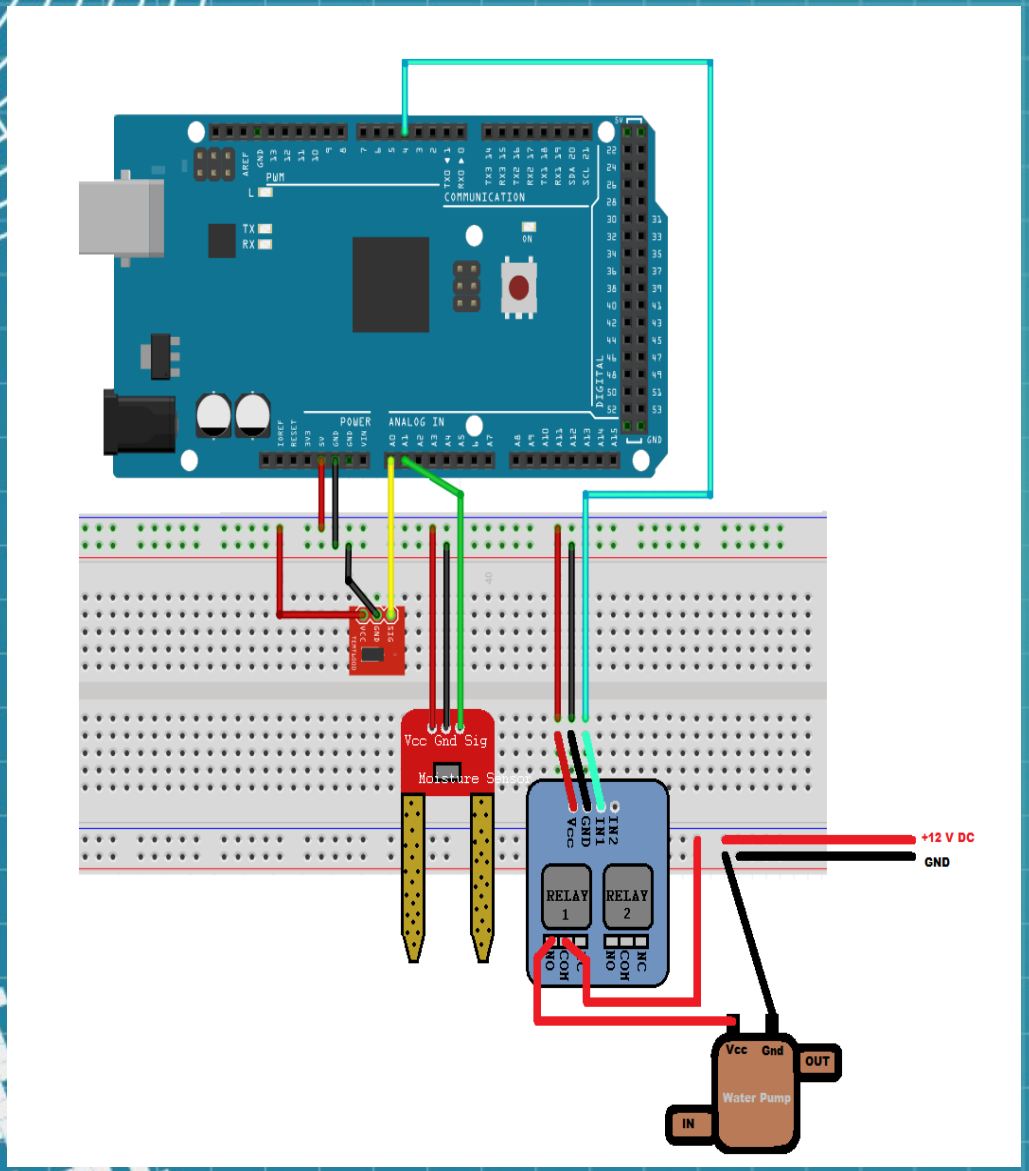
Scope

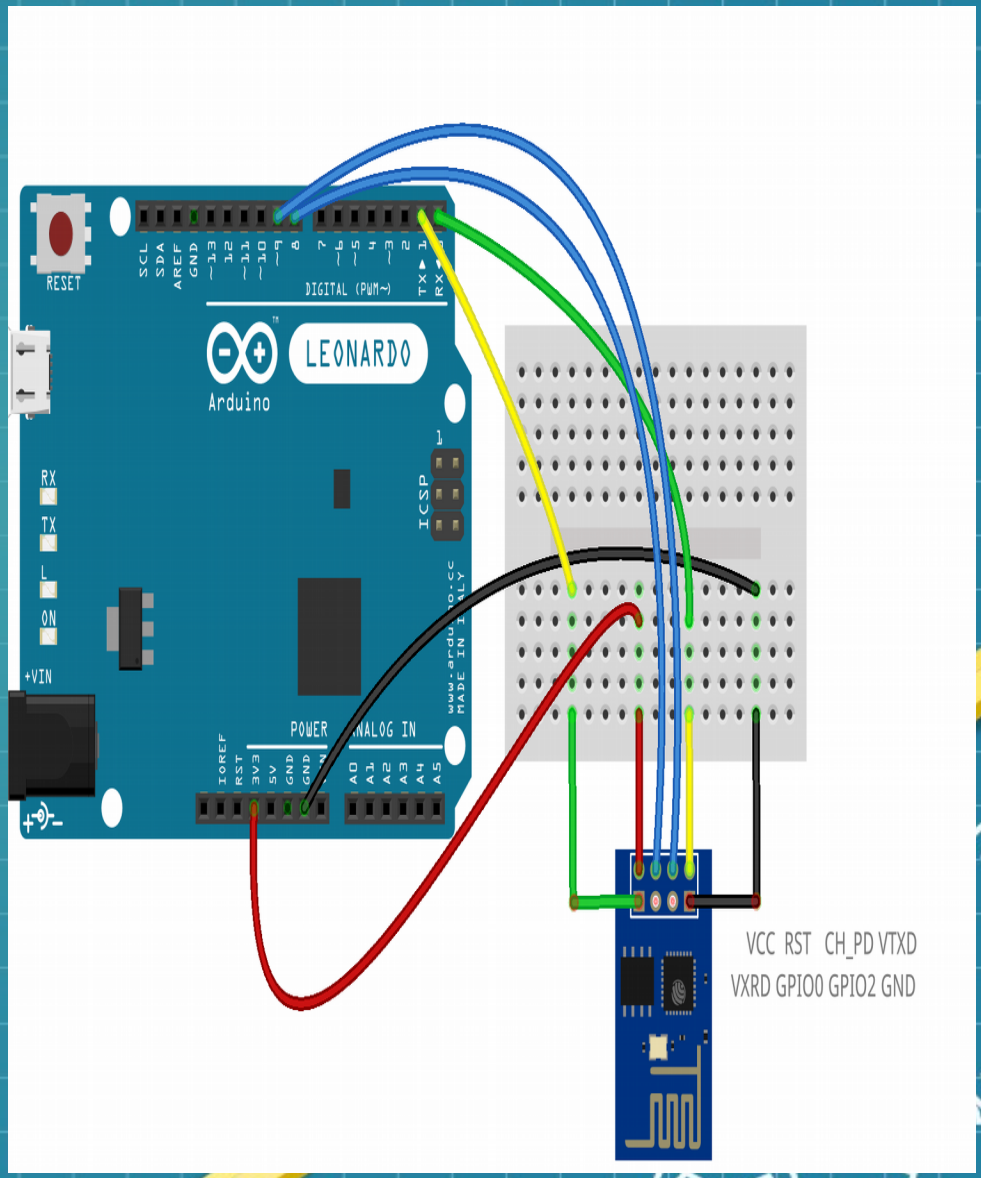
- Temperature is important and potentially limiting factor. Air temperatures below 4 degree C causes tissue damage in most plants, and optimal photosynthesis is not possible for most plants below 15.5 degree C or above 32.2222 degrees F.
- Temperature Sensor will be installed to water plants on thermal data.
- Time Based System will be used to plant water on the initialized time by the user.

Block Diagram



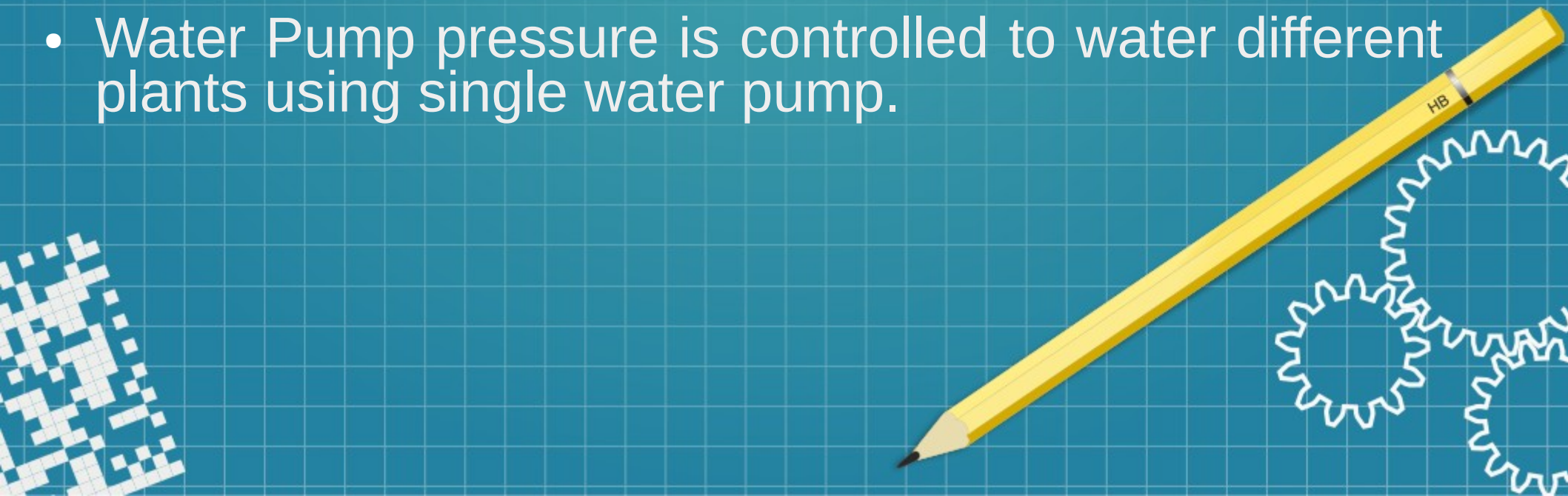
Circuit Diagram





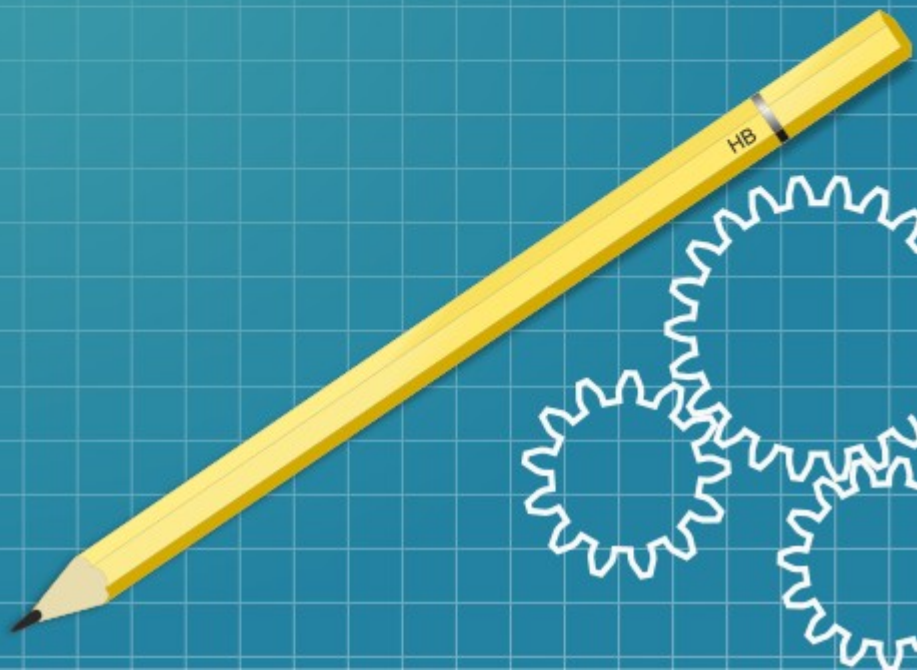
Description

- Soil Moisture Sensor checks moisture level in the soil & returns moisture value to the arduino.
- If moisture level is low than the critical limit then water pump will get switched on.
- Arduino receives request using ESP 8286 module.
- Water Pump is switched on using **Relay.**
- Water Pump pressure is controlled to water different plants using single water pump.



Hardware Requirements

- BreadBoard
- Arduino UNO R3
- Soil Moisture Sensor
- Relay
- Jumper
- Wifi Module (ESP 8266)
- Water Pump
- Water Container

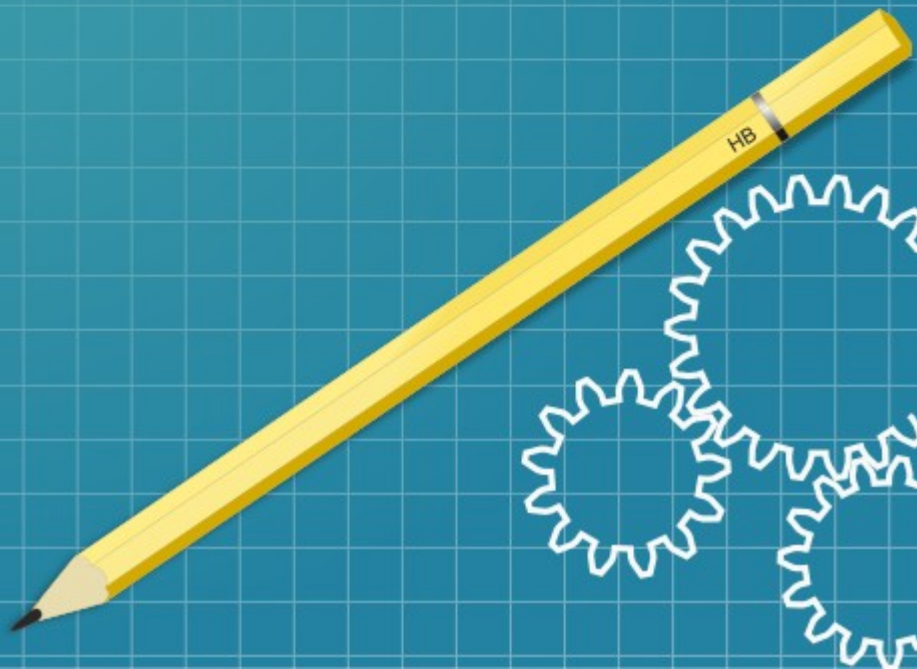


Budget

Sr.No	Item Name	Price
1	Arduino UNO	300
2	Soil Moisture Sensor	120
3	ESP 8266 (WiFi Module)	200
4	BreadBoard	80
5	Water Pump	156
6	Relay	120
7	Jumper	70
8	Water Tank	-
	Total	1046

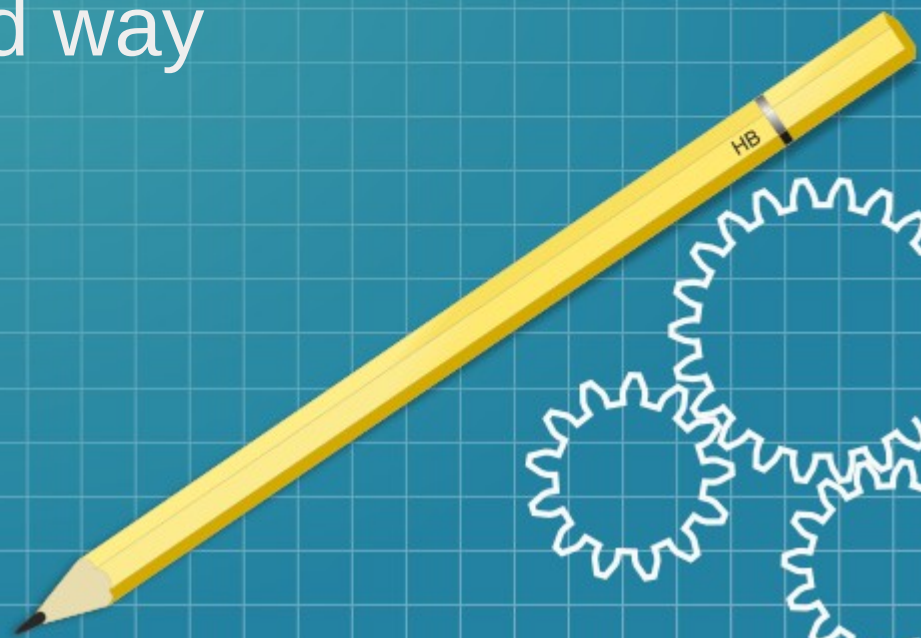
Software requirements

- Arduino IDE
- Postman
- Editor
- Github
- HTML,CSS .
- Node.js



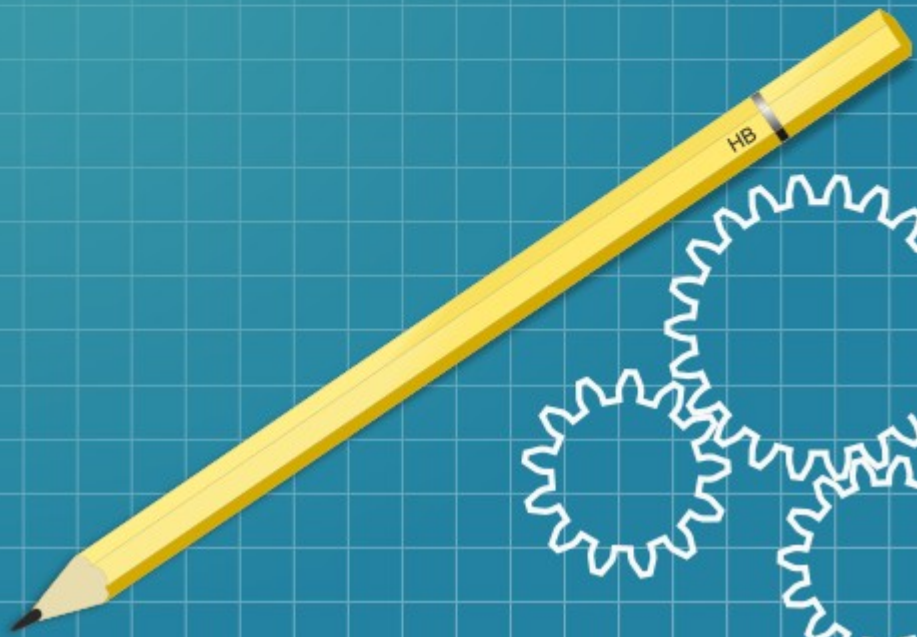
Conclusion

- Irrigation System will help homeowners to take proper and healthy care of plants.
- This can also be installed in farms to increase efficiency in farming and increase productivity.
- Very helpful in drought conditions as it will help to use water in a optimized way



References

- Google
- http://www.circuitstoday.com/arduino-irrigation-plant-watering-using-soil-moisture-sensor



Thank You!

Feel Free to ask questions!