3D Printed Smart Plant Base (Smart Home)

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Abstract – *Whether for business or pleasure, traveling is always a lot of fun. It gives us new experiences and opportunities to grow as "people". But what if you grow your houseplants while you are away? When you are at home and forget to pour or douse it. It's going to be a shame. I have the perfect solution to all of these problems, why not build an automatic irrigation system? Soil moisture, the sensor is stuck in the soil and then it makes the LEDs flash and present an OLED display of the moisture content in the soil. The LED emits red light if you forget to water and wait a while, and if not appear around your plants pour, pour them automatically. This 3D printed "automatic smart plant pot" looks simple on the outside, but inside there are electronics, pumps, and a water reservoir that work together to keep your plants healthy and happy.*

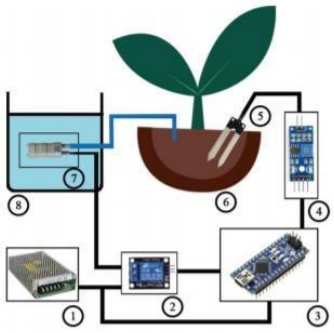
***Key Words*: Automatic Watering System, Watering System, Travel, LED, Business, etc**

1.INTRODUCTION

In the electronic or modern age, people need more things that can automate their lives as much as possible.I have developed a system called an automatic plant watering system that automatically water your plants with a moisture sensor to detect the moisture level and automatically detect if the water level is low. Irregular watering can lead to mineral loss in the soil and damage the roots of your plants, is there any way we can know if the soil really needs watering and if so, when exactly and how much water needs to be poured? Is there any way that you can water your plants from a remote location? These are some questions that are heard frequently, and the answers to all of them are encouraging and affirmative because technological advances have opened up so many opportunities for us. In fact, there is an inexpensive and perhaps simple solution to all of these problems.

1.1 Method & Material's Used

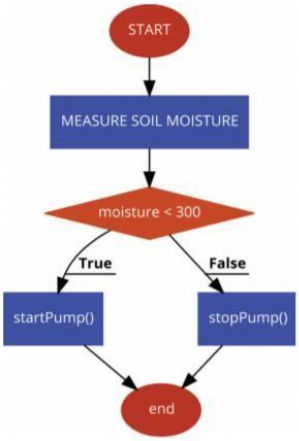
Although there are some companies selling these systems made in various ways, there is a simple way that anyone can build their own plant irrigation system in a matter of hours, if all the necessary materials are available on-site in the course of the process with basic knowledge of electronics. The system can only be built if all connections have been made correctly. The connection to be made can be seen in the picture. In our experiment, we connected all the necessary materials exactly as shown in Figure 1 above, so that the experiment works properly. In addition, the general behavior of our system, which was the subject of the experiment, was observed in the following days.



1) Power Supply (12V)
2) Relay module
3) Microcontroller (Arduino Nano)
4) Amplifier circuit as part of a soil moisture sensor
5) Soil moisture probes
6) Plant in the flowerpot
7) Water pump
8) Water container

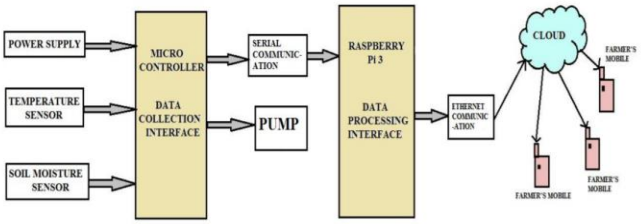
1. Functional Principle

A component diagram is used to visually represent component connections. The components communicate with each other via an interface called aurdino and a user can communicate with the device via a mobile interface. The implementation of the project required careful implementation of the system design developed in the project planning phase.What is a bespoke 3D printed flower pot? It has been shown that the extensive implementation of automated systems in agriculture successfully lowers costs. The operation of the automated farming system could revolutionize the irrigation process and its impact on the commercial and industrial sectors. The project was a field monitoring method based on an expert or non-expert system to detect drought and treatment of the field. The food and beverage industry prototype system has the potential to be useful to industry seeking ways to make agriculture profitable. The project is the farmers who are the backbone of an agricultural economy.

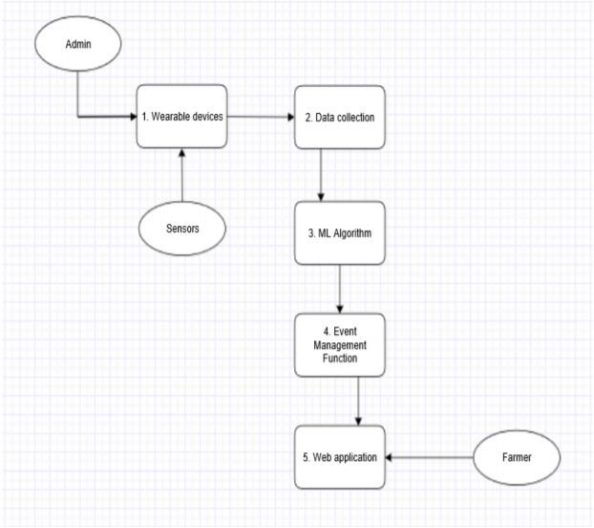


2. RESULTS AND DISCUSSION

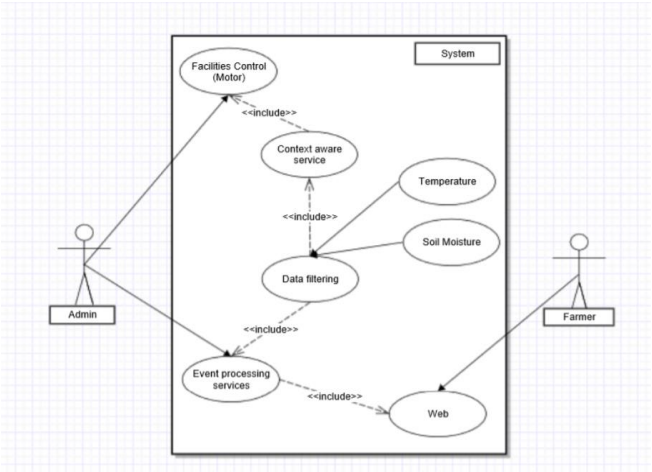
A. System Architecture



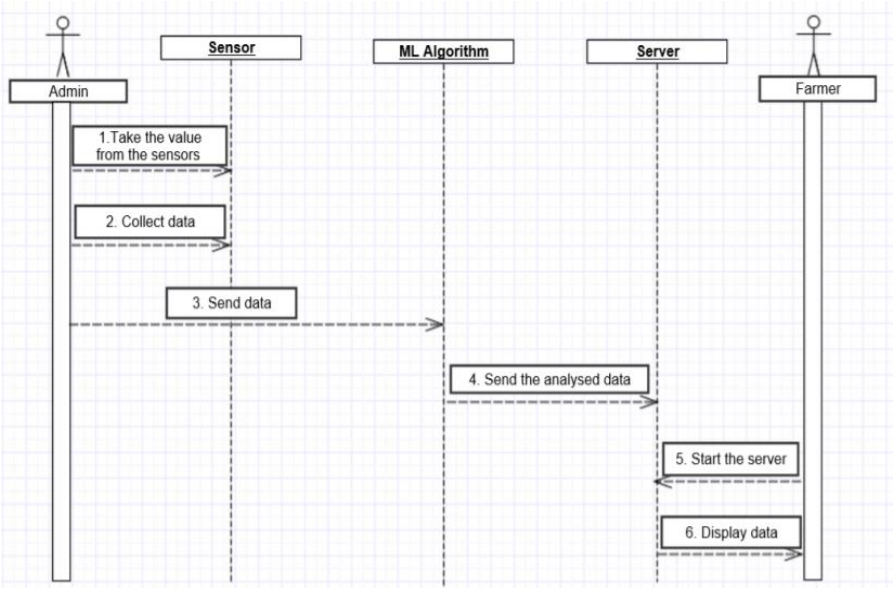
B. Data Flow Diagram



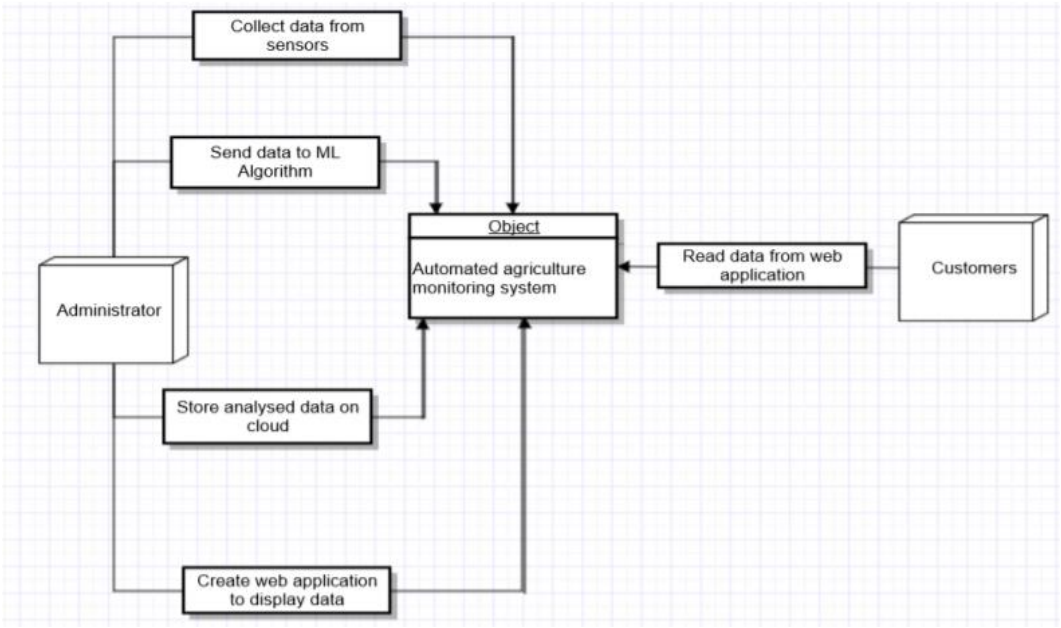
C. Use Case Diagram



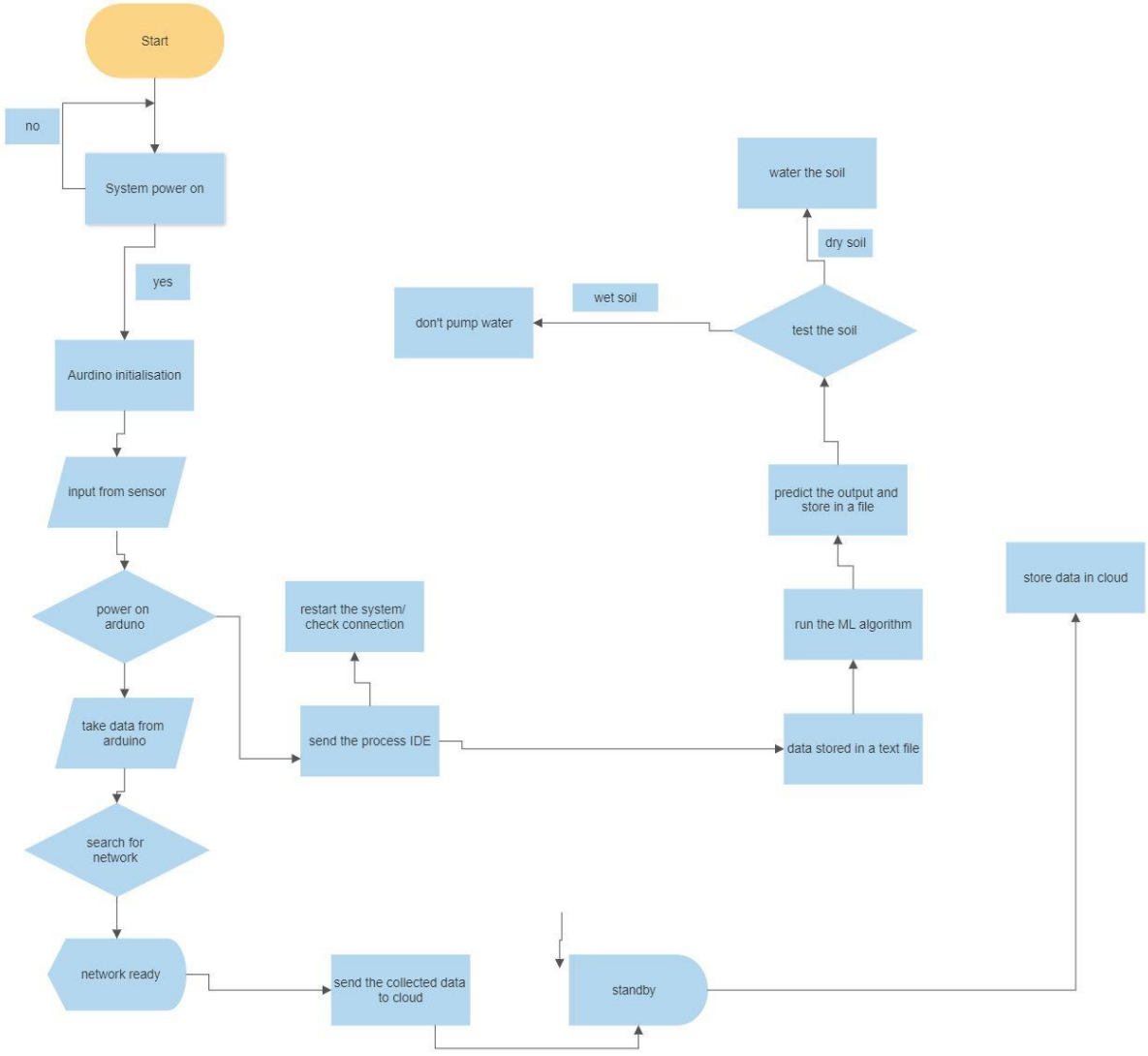
D. Sequence Diagram



E. Context Diagram



F. Flow Diagram



3. CONCLUSIONS & Future Possibilities

Irrigation becomes simple, accurate and practical with the previous idea and can be implemented in agricultural areas in the future to take agriculture to the next level. O\ P of the humidity sensor plays an important role in the project. Therefore the "AUTOMATIC PLANT Irrigation System" (APIS) was successfully developed and tested. It was developed to integrate all properties of all hardware components used. Each module has been thought through and carefully placed beforehand to contribute to the best performance of the device. The system has been tested to work automatically and to the best of our knowledge. Moisture sensors measure the amount of moisture in the If the moisture content is lower than the desired value, the moisture sensor sends the signal to the operational amplifier, which causes the motor pump to turn on and ly the water to the appropriate field area

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