

# IOT BASED SMART GARDEN SYSTEM

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**Abstract:** Agriculture plays vital part in the development of agrarian country like India. Issues concerning husbandry have been always hindering the development of the country. The only result to this problem is smart husbandry by contemporizing the current traditional styles of husbandry. Hence the proposed system aims at making husbandry smart using robotization and IoT technologies. Internet of Effects (IoT) enables colorful operations crop growth monitoring and selection, irrigation decision support, etc. A Jeer Pi grounded automatic irrigation IOT system is proposed to modernization and improves productivity of the crop. main end of this work to crop development at low volume waterconsumption, In order to concentrate on water available to the shops at the needed time, for that purpose utmost of the growers waste lot time in the fields. An effective operation of water should be developed and the system circuit complexity to be reduced. The proposed system developed on the information transferred from the detectors and estimate the volume of water demanded. A two detectors are used to get the data to the base station the moisture and the temperature of the soil, the moisture, the temperature, and the duration of sun per day. The proposed systems grounded on these values and calculate the water volume for irrigation is needed. The major advantage the system is enforcing of Precision Agriculture (PA) with pall computing, that will optimize the operation of water diseases while maximizing the yield of the crops and also will help in assaying the rainfall conditions of the field. .

**Keywords:** Internet of Things (IOT), Agriculture, Automation

## INTRODUCTION

This Automation rules the world nowadays. It is a technique of using computers or mobile phones in monitoring and controlling the simple parameters of day to day life. The standard of our life will be nourished by the practice of using automation for simple things. Using the concept of IOT we make sensors to communicate with each other which are powerful in automation. The important aspect of this prototype is that it saves cost and ensures safety. When people try to make plantings and set up their own garden, they were cautious in maintenance at only in their beginning stages. As days go on due to lack of maintenance the plants get destroyed. This prototype will help people to automatically monitor the parameters and ensures maintenance of the garden. It plays a vital role and serves as a good companion for plants. IOT provides solutions for various problems and it allows things to be sensed or controlled remotely in network infrastructure. Plants are considered to be the major source of the survival and helps to purify the air filled with pollutants. Many feel responsible to plant a tree and some consider it as a hobby. Planting a tree is not just burying a seed ball in the soil, it has many factors to be considered. Some plants need more care for an efficient growth. There are some plants which are grown only for showcase purposes and homemade agriculture. The required environment must be provided to the plant and should be watered time to time to make the photosynthesis happen. We also know that one kind of soil or nutrient is not sufficient to all the plants to grow better. Each plant has its characteristics to gain a high yield. To overcome all these problems, we are going to set a monitoring machine. This can be defined as a system which not only monitors the growth but also gives alerts when there is a defect in the growth or proving a suitable environment. This type of system can be created with the help of Internet of Things (IOT).

## AIM AND OBJECTIVE

- The Aim of the project is to avoid plant damage. Our goal is to provide the Automation using IOT.
- To reduce the problem of time consuming.
- To make a centralized system to avoid the plant damage.
- Easy to understand Application.
- It will be enjoyable method without affecting their day to day life.
- Plant health maintain.

## MOTIVATION

Plants are considered to be the major source of the survival and helps to purify the air filled with pollutants. Many feel responsible to plant a tree and some consider it as a hobby. Planting a tree is not just burying a seed ball in the soil, it has many factors to be considered. Some plants need more care for an efficient growth. There are some plants which are grown only for showcase purposes and homemade agriculture. The required environment must be provided to the plant and should be watered time to time to make the photosynthesis happen. System also know that one kind of soil or nutrient is not sufficient to all the plants to grow better. Each plant has its characteristics to gain a high yield. To overcome all these problems, we are going to set a monitoring machine.

## PROBLEM DEFINATION

This system is creating an android application that allows user to provide as well as get the knowledge videos, audios and documents, Each user has to register to use our application, after registration user will create unique id and password that allows user to login to the system, each user can select multiple courses videos, audios, or documents. Admin will have separate login, admin able to see no of users info, admin also able to modify user, admin able to add documents, videos and audios. Our aim is to provide knowledge accessible to everyone. This system is also adding feedback system which will help admin to improve the content in application.

## LITERATURE SURVEY

**R.Nageshwara Rao** et.al, proposed a system which will helps for smart agriculture by using automatic and IoT technologies. The proposed system works on Raspberry pi based automation which improves the crop productivity. IoT provides various applications for crop growth and also helps in the decision support at the time of need. Main theme of this paper is to increase the crop productivity by consuming less amount of water. For watering the crops framers waste lot of time and also consume more than the required amount of water so to minimize the loss, this paper proposed a system which will efficiently manages the watering system with less complexity. This system works on the data which comes from the sensors used for gathering the information like moisture content, humidity and temperature of the soil. Major advantage of this system is to provide a smart agriculture and to implement an automatic watering system for farming which will helps to reduce the water consumption.[1]

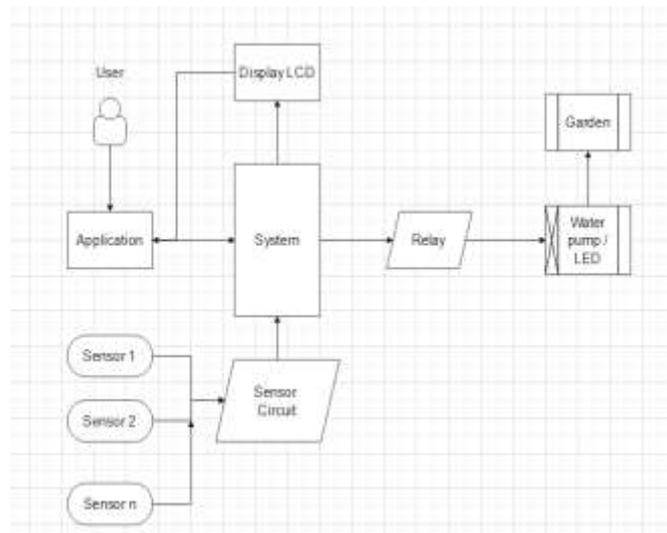
**Tanu Sahu** et al, proposed an automated watering system by considering water scarcity at some regions. Excess watering will also affect the crop in many ways. Due to this the soil fertility will get reduced, crop production will get reduced, so to minimize the crop loss this system was developed with an automatic sprinkler which will distributes water to all crops in an efficient manner without any wastage of water. This system works on the data gathered like the soil temperature, humidity and weather condition. This information will be gathered by using the temperature sensor and moisture sensor. Raspberry pi acts as a heart for this proposed system. Whenever there is a change in the moisture content or in the temperature the sensors will automatically sends the signals to the raspberry pi and it will alert the sprinklers and automatic watering will be done. This paper mainly projects the need of an automatic watering system for a proper irrigation and the development of an automated sprinkler by using raspberry pi. Shamma Ali, Hamda Saif, Hasa Rashed, HEND AlSharqi and Ammar Natsheh This paper proposed a system which will increase the efficient usage of watering and less consumption of energy. presenting the smart irrigation by using the energy for solar panel will reduce the energy consumption. Using the devices like Arduino, Raspberry pi, camera and other technologies the proposed system is developed. This paper mainly projects the efficient usage of energy obtained from solar panel and reducing the water wastage by using Arduino and Raspberry pi.[2]

• **Pareena Jariyayothin** et.al, proposed a system based on IoT which is used for smart monitor and control over homegrown plants. Arduino UNO acts as the heart of the overall system and microcontroller is used for data transfer which is obtained by the sensors. A mobile application is also made available where the end user can add any plant growth conditions. Major advantage of this system is to smart monitor and to implement control watering for plant growth.[3]

## PROPOSED SYSTEM

This prototype will help people to automatically monitor the parameters and ensures maintenance of the garden. It plays a vital role and serves as a good companion for plants. IOT provides solutions for various problems and it allows things to be sensed or controlled remotely in network infrastructure. The required environment must be provided to the plant and should be watered time to time to make the photosynthesis happen. This system also know that one kind of soil or nutrient is not sufficient to all the plants to grow better. Each plant has its characteristics to gain a high yield. To overcome all these problems, we are going to set a monitoring machine.

## SYSTEM ARCHITECTURE



**Fig -1:** System Architecture Diagram

### ADVANTAGES

- Easy to use
- Security
- High Performance

### APPLICATIONS

- Personal
- Gardening
- Farming
- Nursery

### CONCLUSION

We presented the architecture and the implementation of a smart home irrigation system. The system consists of two types of sensors motes (TelosB and IRIS), special soil humidity sensors, electro-valves that are motedriven with the use of relays and a Java application that is used for data collection. Performance evaluation showed that our system manages to maintain soil hmidity levels regardless of external factors (i.e. variations at temperature and sunlight). It also proved that the system is aware of the different watering needs each.

### FUTURE WORK:

In back to learn we have categorized whole system into three levels which we will be focusing. First level (Start) will be of People who never went for the schooling our application will teach them the basic education like word, alphabets, numbers. Second level (Moderate) will be of people who went for the regional schools of their mother tongue like hindi, Marathi etc. Our application will teach them the information of preposition, sentence formation, word completion. Third level (Expert) will have english grammar like tenses, paragraph. the user (illiterate adult) will be able to read and write at least basic words and sentences of english and marathi this would be small step to increase literacy rate of India. The rapid increase in Internet connectivity in the last few years has been an important catalyst for the growth of e-learning in India.

A robust Internet ecosystem, with a multitude of local and global players, will help online learning make further inroads. Leading companies are adopting e-learning to support both short term courses and qualification-focused learning objectives among their employees.

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