

## Rain Water Detector

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### ABSTRACT

People today waste too much water, and the majority of the water used for drinking comes from agriculture, which results in a significant loss of freshwater. Therefore, it is important to stop this practise or at least reduce it in order to conserve water. We are building a rain water detector that will enable us to recognise when it is going to rain so that we can get ready to collect the rainwater and use it for household purposes. We can utilise rain water detectors in a variety of locations, including malls and public spaces, and we can use the water they store for cleaning tasks.

**Keywords:** Reuse, Domestic work, Agriculture

### I. INTRODUCTION

A switching device actuated by rainfall is a rainwater detector. The rain water detector's two most crucial features are. The first is a water-saving gadget that is connected to a computerised irrigation system and is programmed to cut off when it starts to rain. The 2d is a device intended to protect a car's interior from rain and other elements. When a rain detector detects it, windscreen wipers can be operated automatically. Rain caused the alarm to go off. An environmentally beneficial technique to stop irrigation whenever it rains is with a rain detection alarm. Additionally, customers utilise it in household automation to reclaim their possessions and cover windows. In some circumstances, we can collect some rainwater.

### II. REVIEW OF LITERATURE

A rain alarm is a device that will undoubtedly function in accordance with your wishes. The sign will be produced by a machine when it starts to rain. When it rains heavily, the frequency increases, and when it rains lightly, the frequency decreases significantly. The frequency will entirely depend on the amount of rain. Every moment it starts to rain, the circuit will produce a musical tone.

### III. RAIN WATER SENSOR

A rain sensor is a rain switch device that is turned on by a downpour. The rain sensor has two primary purposes. The first is a water-saving device connected to an automatic irrigation device that causes the device to shut off in the event of rain. These cond device helps the automatic wind display wiper mode an disintended to protect a vehicle's interior

from rain. The ability to activate a rainblower on the antenna feed aperture to clear away water droplets is another useful feature of professional satellite TV for computer communications antennas.



## IRRAGATIONS ENSOR

Both wireless and hard-wired rain sensors for irrigation systems are available; most use hygroscopic discs, which inflate in the presence of rain and shrink back down when they dry up. In particular, they may be connected to their irrigation controller's sensor terminals or are set up in collection with the solenoid valve common circuit so that they prevent the opening of any valves when rain has been detected. Wi-fi and wired versions use similar mechanisms to temporarily droop watering by using their irrigation controller.

## IV. OBJECTIVE

The primary purpose or purpose of the mission are-

### 1. Water conservation

The usage of a rain sensor can help you conserve a lot of water. Your lawn irrigation system can be set to switch off automatically whenever it rains, saving water that can be used for other crucial things like putting out fires.

### 2. To save you disease damage and Nutrient Loss

By preventing your plants' roots from growing deeply into the soil, overwatering makes them more susceptible to disease. As excessive watering washes away the soil's vitamins, leaving your flora vulnerable and dangerous, overwatering is also a major cause of nutrient loss in flowers.

### 3. To save cash on Fertilizer

You are prevented from overwatering your lawn and plants by a rain sensor. The nutrients from the turf wash away into the drainage system when a plant is overwatered. You must make up for this by fertilising your plants

and

grass more frequently. This suggests purchasing fertilisers at a higher cost. The turf in your garden will continue to be a truly ideal environment for your plant life in accordance with the fertiliser that you are using if you have a rain sensor that effectively stops your garden irrigation machine from overwatering your lawn and vegetation.

## 4. To grow the life-span of your Irrigation System

Because a rain sensor reduces the amount of time your lawn irrigation is running, it protects your lawn irrigation system from needless wear and tear. This is especially helpful during the rainy season when the rain can come and go suddenly. 4. To protect you Pollution of Groundwater and Waterways Insecticides, motor oil, fertiliser, dog excrement, and sediment runoff are all reduced to a minimum by a garden irrigation system with a rain sensor.

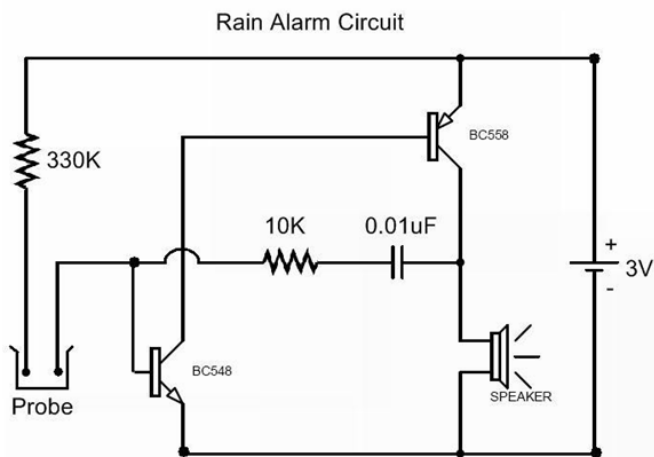
Additionally, it reduces the amount of pesticides and fertilisers from your garden that enter your groundwater machine.

## V. METHODOLOGY

Because we are becoming increasingly motivated to complete the activity, we will use any additional means necessary to achieve our goal or produce a result. The first stage of our work, which is typically the theoretical component, can be completed using the department computer lab. In this case, we have access to the internet and can obtain the project plan as well as all the pertinent statistics. The branch laboratories will be used to represent our project's second phase using the tools from the paper paintings. Additionally, we could make use of the digital and electronics labs.

## VI. EQUIPMENT REQUIRED

This project can be made with high-quality, easily accessible materials that can be purchased for a reasonable price. Do not overlook the circuit schematic for the rain alarm shown below.



The materials or tool that may be needed are as shown above in the circuit schematic for the rain alarm: 1. Resistor:- two resistors of 330k and 10k

1. Transistor:- NPN and PNP transistors, which have low working voltages for greater protection and the lowest cost, are the two types of transistors employed in this task.

Transistors of the BC548 and BC558 kinds are employed.

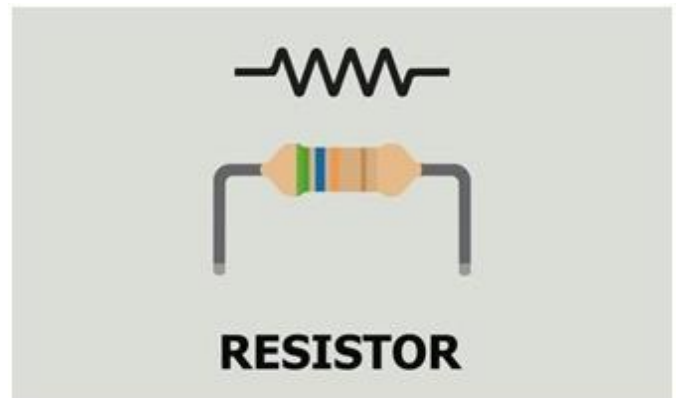
2. capacitor (zero.01mf):- The net charge either plate of the capacitor is equal and opposite to the net charge stored in a capacitor = zero.

3. Speaker:- This tool is used to make touch with the probe and obtain a musical sound during rain.

4. Battery (3v):- 3V batteries are small batteries that are capable of providing 3 volts of power to a wide variety of small household electronic devices. They come in two general form factors, button cell, also called coin cell, and CR2. They are generally powered by lithium technology or traditional alkaline battery technology.

5. Probe:- It has long been used to predict when it will rain. It will create a valid once it switches the signal to the speaker.

6. Electric powered wires:- It is frequently used to affix the hardware's circuitry components.



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Resistor



Capacitor



Transistor



Buzzer

## VII. CONCLUSION

In general, there was unwavering belief that water is crucial to our survival. We may conclude that the project will provide significant benefits for home, commercial, and industrial appliance after it is completed.

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