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# Planty.

## PROBLEM

Plants are not getting optimum amount of water that they should be getting to live due to drastic climate changes and insufficient plant knowledge of the owners.

Some people are lazy to water their plants or are unable to water to plants when they are travelling overseas, but they still want plants in their house/office.

## AIMS

Allow for a system that reads the plant's health by getting information about the soil and its surroundings.

Waters the plant when the plan requires it the most, automatically.

Gives the plant owner information about the plant's health on a mobile application and the watering timings.

## SOLUTION

The moisture of the soil and the temperature and humidity of the surroundings will be read and a Machine Learning process is applied to determine if the plant needs to be watered.

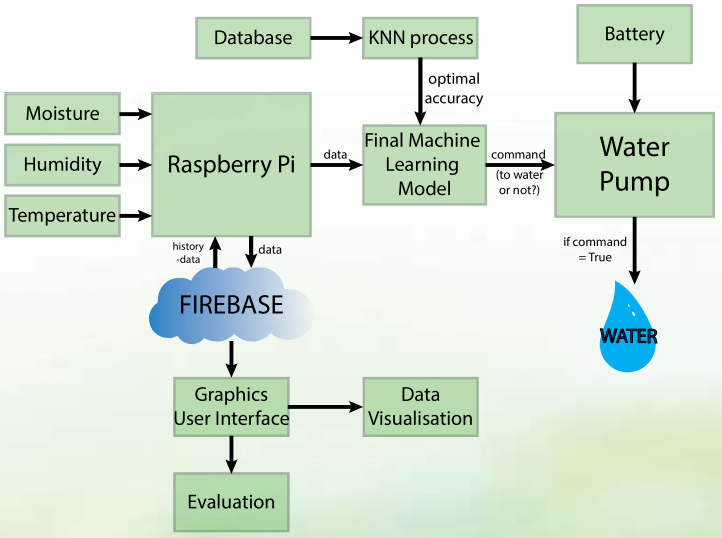
If the plant needs to be watered, the pump will get the information and it will pump water through the pipe into the plant.

The information will also be known to the owner on his mobile phone application.

## Features:

- Temperature Sensor
- Humidity Sensor
- Moisture Sensor
- Mobile Application

## SCHEMATICS




## BENEFITS

We will be saving water. There will be no over-watering of plants, just enough for the growth of the plant.

The plant will not wither as it will recieve enough water required taking into account the weather changes.

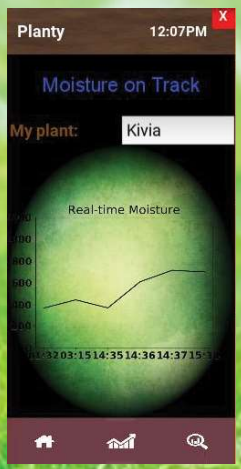
This solution is not limited to any particular type of plant, as long as there is a database of the plant's water requirements, it will work for any and all plant species.

The owner also learns about the plant from the mobile phone application and this system is particularly useful when they are overseas for days at a go.

## HOW TO USE THE GUI


HOME SCREEN

the user can know the basic information of their plants - temperature, moisture, humidity - on this screen.




GRAPH SCREEN

the user can set the name of the plant on the graph page.


INFO SCREEN

the user can see the evaluation of their plants and the watering records on this screen.

## EXPANSION

We would like to add in PH sensor for the soil so that there could be more accurate results for the watering process.

We would like to add more databases for plants with different watering requirement and enable the app to take into account more plants at once.

**Raspberry Pi**
The raspberry pi has all the programming knowledge and codes that we have fed into it, and upon running the codes, the raspberry pi applies machine learning (KNN process) to derive the health of the plant and whether the plan needs to be watered. this information is also fed into the code for the GUI that displays the information for the user in their planty phone application.

**Water Tank**

**Water Pump**
The water pump pumps the water from the water tank to the plant according to the command from the raspberry pi, if the plant is required to be watered or not.

**Temperature and Humidity Sensor**
The temperature and humidity sensor read the surrounding temperature and the humidity in the surroundings. Then the reading if fed back automatically to the raspberry pi and it is combines with the other reading to know if the plant has to watered or not.

**Moisture Sensor**
The Moisture Sensor is inserted into the soil of the plant and it gives the reading of how moist the soil is so that the reading could be fed back to the raspberry pi to combine with other reading to know if the plant has to watered or not.

**Plant**

**Battery**