# Ideation

Date	14 september 2022
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
Team ID	PNT2022TMID07525
Maximum Marks	4 Marks

Ideation:

Agriculture is the unquestionably the largest livelihood provider in India. With rising population, there is a need for increased agricultural production. In order to support greater production in farms, the requirement of the amount of fresh water used in irrigation also rises. Currently, agriculture accounts 83% of the total water consumption in India. Unplanned use of water inadvertently results in wastage of water. This suggests that there is an urgent need to develop systems that prevent water wastage without imposing pressure on farmers. Over the past 15 years, farmers started using computers and software systems to organize their financial data and keep track of their transactions with third parties and also monitor their crops more effectively. In the Internet era, where information plays a key role in people's lives, agriculture is rapidly becoming a very data intensive industry where farmers need to collect and evaluate a huge amount of information from a diverse number of devices (eg. sensors, faming machinery etc.) in order to become more efficient in production and communicating appropriate information.

Proposed system:

The system is a combination of hardware and software components. The hardware part consists of embedded system and software is the webpage designed using PHP. The webpage is hosted online and consists of a database in which readings from sensors are inserted using the hardware.
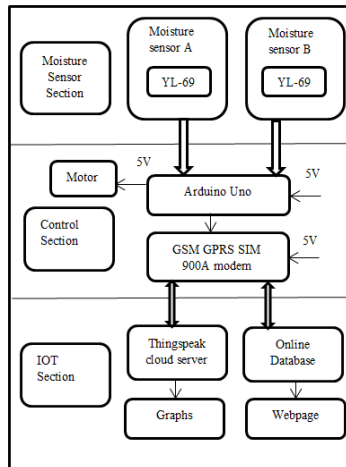
MOISTURE SECTION:

Two YL-69 soil moisture sensors along with LM393 comparator modules were placed in different soil conditions for analysis. The sensor YL-69 is made up of two electrodes. It reads the moisture content around it. A current is passed across the electrodes through the soil and the resistance to the
current in the soil determines the soil moisture. If the soil has more water resistance will be low and thus more current will pass through.

CONTROL SECTION:

Information from the sensors is transmitted to the arduino board. The arduino board consists of microcontroller ATMEGA328P which is responsible for controlling the switching on/off of the motor on which water sprinklers can be attached. Sensor values from arduino are transmitted to the GSM-GPRS SIM900A modem. A sim with 3G data pack is inserted into this modem which provide IOT features to the system. Values are further transmitted IOT section through the modem.

IOT SECTION:

This section comprises of a webpage which displays the current water sprinkler status i.e. on or off and a button which redirects the user to a thing speak page which graphically depicts the sensor values.