1. **PROJECT TITLE**: E-AGRICULTURE : IRRIGATION SYSTEM BASED ON WEATHER FORECASTING WITH USING IOT
2. **SOFTWARE REQUIRED:** ARDUINO IDE
3. **HARDWARE:** Arduino Uno board, Soil Moisture Sensor, Rain Sensor, DHT11 Sensor, DC motor, Coolant Device, Stepdown Transformer, LCD Display and ESP8266 wifi module

**WORKING PRINCIPLE:**

After making the circuit connections :

1. Soil Moisture Sensor is used to sense weather the soil is in dry or wet state: a) If soil condition is detected as dry, then it gives instructions to the dc water motor through soil sensor and its starts to pump water to the soil otherwise dc motor is in OFF .
2. Rain Sensor is used to sense the rain is occur or not: a) If the rain is detected through Rain Sensor, then it gives the instructions to the dc water motor to turn off its function.
3. DHT11 Sensor is used to sense the temperature: a) if the temperature is detected more than 32 degrees, it gives the instructions to coolant device to cool the weather condition in the particular field area.
4. LCD Display is used to display the information of soil, rain and temperature conditions.
5. ESP8266 wifi module is used to diplay the total crop information as a web page in our mobile through IP address of the ESP8266 wifi module.

**Advantages of this Project:**

* According to in ancient agriculture methods they are used plenty of water (free flow of water) to wet the soil in their fields, But we can wet soil required amount of water by using our project. Here the main advantage of our project is to save the water by optimizing method.
* We can always maintain maxmimum amount of fertility of soil , because we can always monitor the condition of the soil by using the sensors which we have used in our project.
* We can always maintain the required temperature in that particular field area by using the DHT11 sensor, it can detect the temperature and it can gives the instructions to the coolant device to maintain the required temperature.
* We can Yield maximum amount of the crop by using our project, Because it will always maintain the required condition for the crop.
* We can always monitor the crop condition through our mobile .