# Fabrication of multifunctional solar based Smart irrigation system.

## About This Project:

The Smart irrigation System has wide scope to automate the complete irrigation system. Here we are building a IoT based Irrigation System using ESP8266 NodeMCU Module and DHT11 Sensor. It will not only automatically irrigate the water based on the moisture level in the soil but also send the Data to Blynk apps to keep track of the land condition. The System will consist a water pump which will be used to sprinkle water on the land depending upon the land environmental condition such as Moisture, Temperature and Humidity. We previously build similar Automatic Plant Irrigation System which sends alerts on mobile but not on IoT cloud. Apart from this, soil moisture detector circuit can also be helpful in building Smart Irrigation system. Before starting, it is important to note that the different crops require different Soil Moisture, Temperature and Humidity Condition. So in this tutorial we are using such a crop which will require a soil moisture of about 50-55%. So when the soil loses its moisture to less than 50% then Motor pump will turn on automatically to sprinkle the water and it will continue to sprinkle the water until the moisture goes upto 55% and after that the pump will be turned off. The sensor data will be sent to Bylinks apps Server in defined interval of time so that it can be monitored from anywhere in the world.

## Block Diagram:

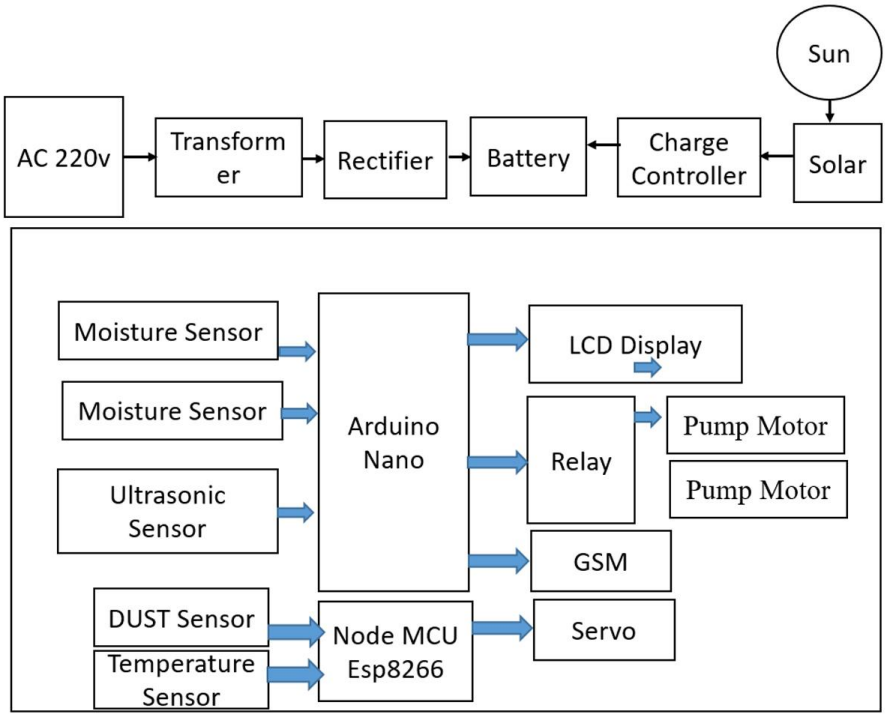


Figure: Block Diagram of Fabrication of multifunctional solar based Smart irrigation system.

## Required Instrument:

- Arduino Nano.
- Node MCU.
- Servo Motor.
- LCD Display.
- Moisture Sensor.
- Ultrasonic Sensor.
- GSM Module.
- Dust Sensor.
- Temperature Sensor.
- Solar Panel
- DC Pump Motor.

## Advantages:

- Do not waste time.
- Very Cost Effective.
- Do not waste in water.
- Physical power is not wasted.
- More accuracy.
- Renewable energy.
- All time monitoring with Internet.
- Automatic Notification via Mobile SMS.

## Applications:

The project has a major application in the

Main applications can be for:

- ❑ It can be used in any agricultural Field.
- ❑ It can also be used in the field of roofing agriculture in buildings.

**N.B:** *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*