
WELCOME

# AUTOMATED IRRIGATION SYSTEM

Done by

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# Introduction

- Irrigation is the artificial application of water to the land or soil.

- Knowing when and how much to water is two important aspects of watering process.

- To make the farming works easily, the automatic irrigation system is created.

# Problems faced in Agriculture

## Over Irrigation

## Under Irrigation

# Objective

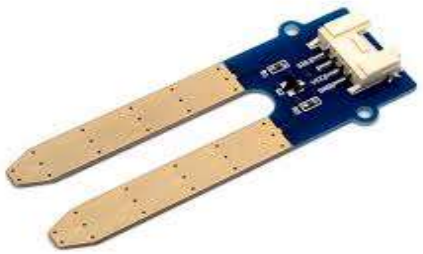
- To minimize  manual intervention by the farmer.
- To prevent excessive wastage of water,electricity.


# LIST OF COMPONENTS

- Arduino uno board


- Moisture sensors

- Motor/pump

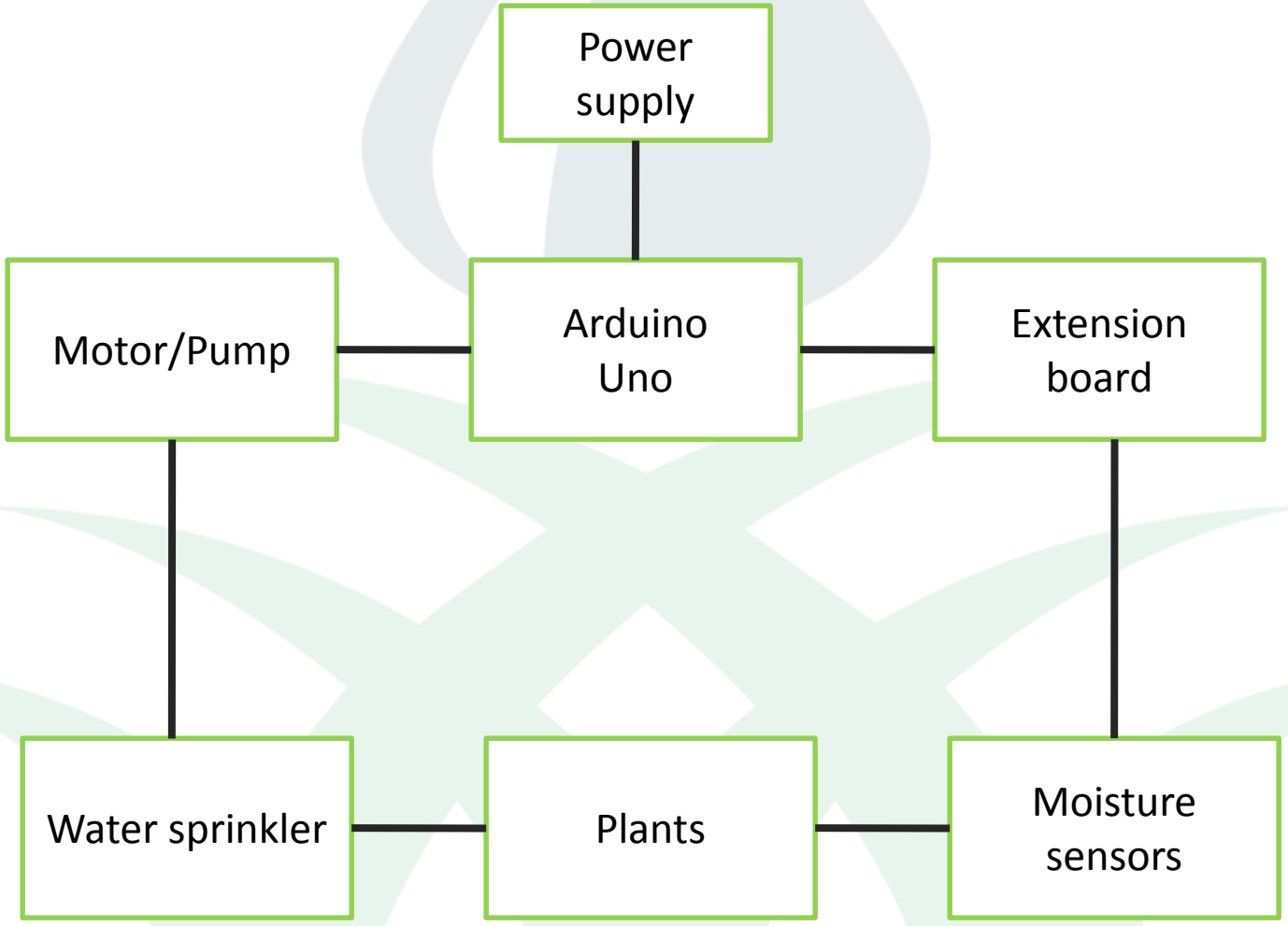


- Power supply(7-12v)

- Usb connector

- Water sprinkler

# BLOCK DIAGRAM



- The System takes care of the moisture content of the soil And waters It accordingly

# WORKING

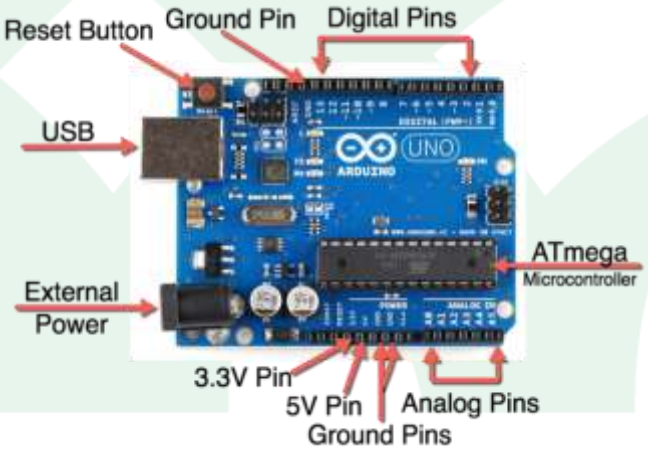
•This project uses Arduino Uno to controls the motor. The Arduino Board is programmed using the Arduino IDE software.

•The moisture sensor measures the level of moisture in the soil and sends the signal to the Arduino if watering is required.

• The motor/water pump supplies water to the plants until the desired moisture level is reached.

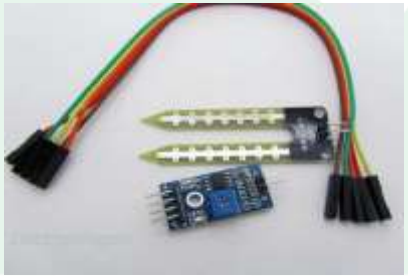
# ARDUINO UNO

•The Arduino Uno is a microcontroller board based on the ATmega328.
•It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16MHz Ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button.
•The Arduino Board is programmed using the Arduino IDE software.



# MOISTURE SENSOR

- Soil moisture sensors measure the water content in soil.A soil moisture probe is made up of multiple soil moisture sensors.
- Soil electrical conductivity is simply measured using two metal conductors spaced apart in the soil except that dissolved salts greatly alter the water conductivity and can confound the measurements.
- The soil electrical conductivity sensitive to variations in soil salinity and temperature as well as water.



# WATER PUMP

- The water pump is used to artificially supply water for a particular task.
- It can be electronically controlled by interfacing it to a microcontroller.
- It can be triggered ON/OFF by sending signals as required. The process of artificially supplying water is known as pumping.

# SIGNIFICANCE OF THE PROJECT

- Irrigation in fields.
- Irrigation in garden,parks.
- Very useful for people who do not have time to water their plants because of busy life schedule.
- The project is very economical in terms of cost and power.

# MERITS

- Highly sensitive
- Works according to the soil condition
- Low cost and reliable circuit
- Complete elimination of manpower
- System can be switched into manual mode whenever required

# Bill of Materials

Arduino uno 390

Moisture sensor 115

Total cost 505

# conclusion

- In present days especially farmers are facing major problems in watering their agriculture fields.it's because they have no proper idea about when the power is available so that they can pump water. Even after then they need to wait until the field is properly watered ,which makes them to stop other activities.
- Here is an idea which helps not only farmers even for watering gardens also,which senses soil moisture and switches the valve automatically when the power is ON


Thank you!