Smart Irrigation System

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What is an Irrigation System?

Irrigation is the artificial process of applying controlled amounts of water to land to assist in the production of crops.

IoT (Internet of Things)

- The Internet of Things (IoT) is the inter-networking of “physical devices” also referred to as "connected devices" and "smart devices”.
- Sometimes referred to as the Internet of Everything (IoE) and Machine to Machine (M2M) communicating.
- IOT is expected to offer advanced connectivity of devices, systems, and services that covers a variety of protocols, domains, and applications

Problem Statement

IoT based Smart Irrigation System. The proposed system can be used to switch on/off the water sprinkler depending on the soil moisture levels thereby making the process simpler to use.

System Components: Hardware and Software

Arduino UNO - Arduino UNO is a low-cost, flexible, and open-source microcontroller board that can be integrated into a variety of electronic projects.

Diode - A diode is a basic PN junction semiconductor device well-known in the microelectronics world.

Transistor - A transistor is a semiconductor device used to amplify or switch electrical signals and power.

Battery - Batteries are a collection of one or more cells whose chemical reactions create a flow of electrons in a circuit.

Capacitor - The capacitor is a component that has the ability to store energy in the form of an electrical charge producing a potential difference across its plates, much like a small rechargeable battery.

System Components: Hardware and Software

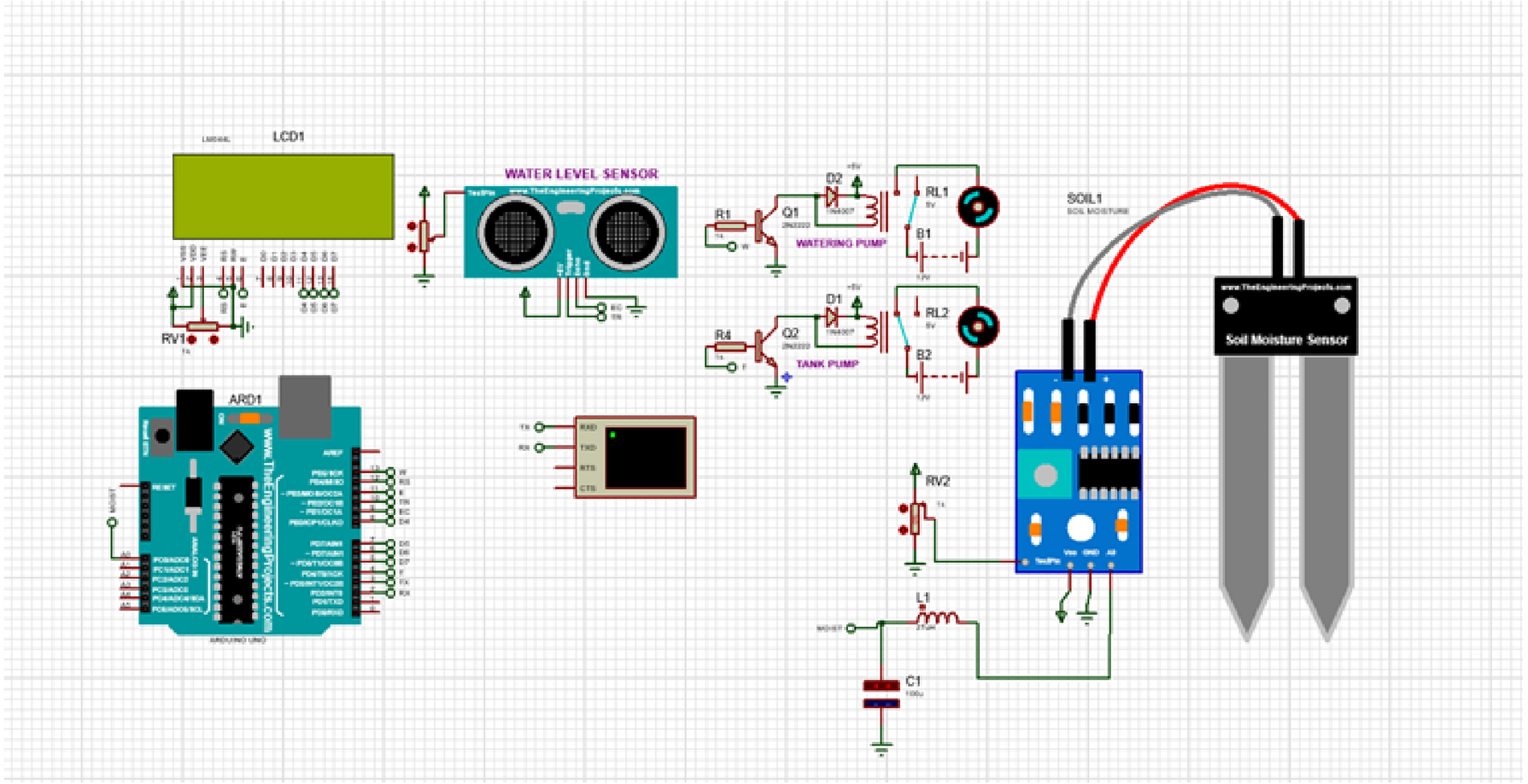
Inductor - An inductor is a component that is used in most power electronic circuits to store energy in the form of magnetic energy when electricity is applied to it.

Relay - Relays are the switches which aim at closing and opening the circuits electronically as well as electromechanically

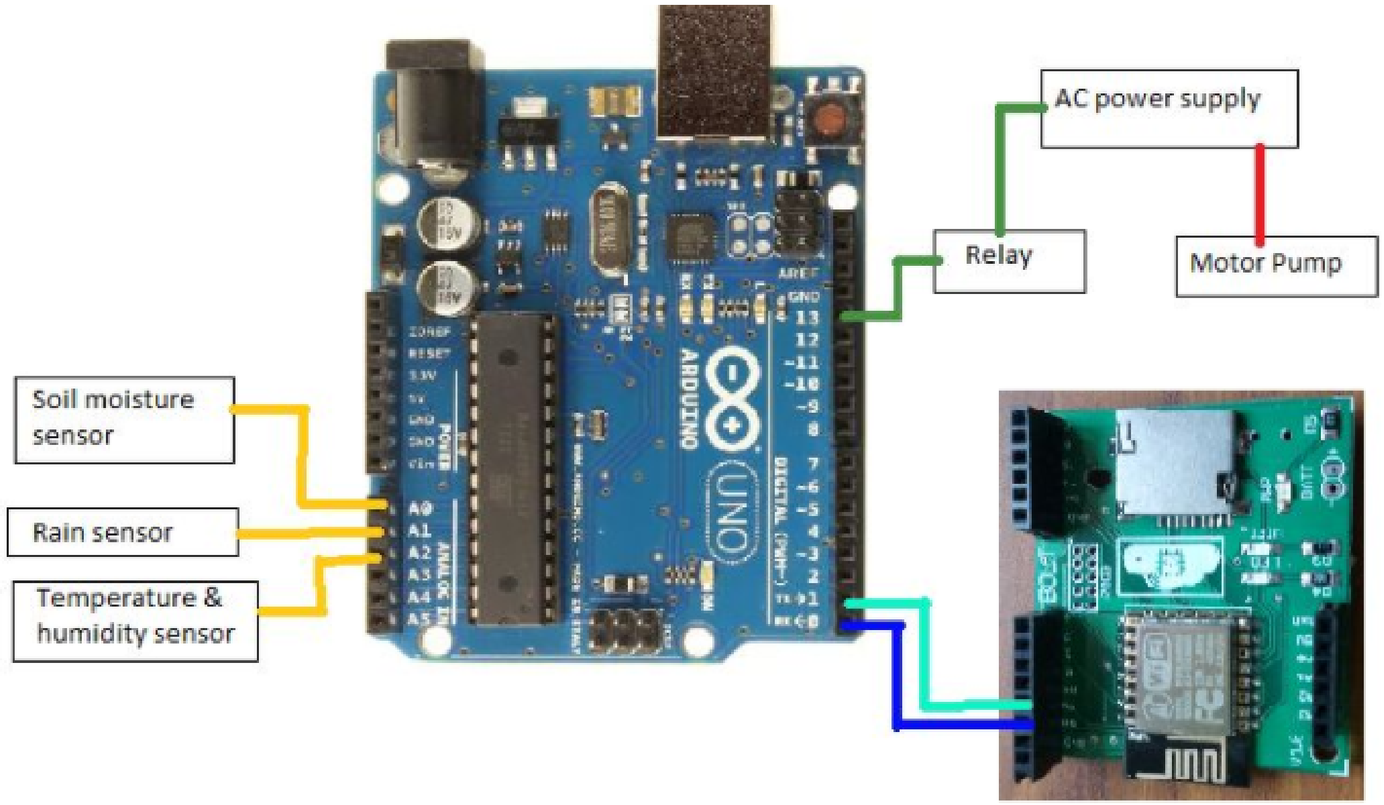
Soil Moisture Sensor - Soil moisture sensors are used for measuring the water content of the soil.

Ultrasonic Sensor - An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves.

The Proteus Design Suite



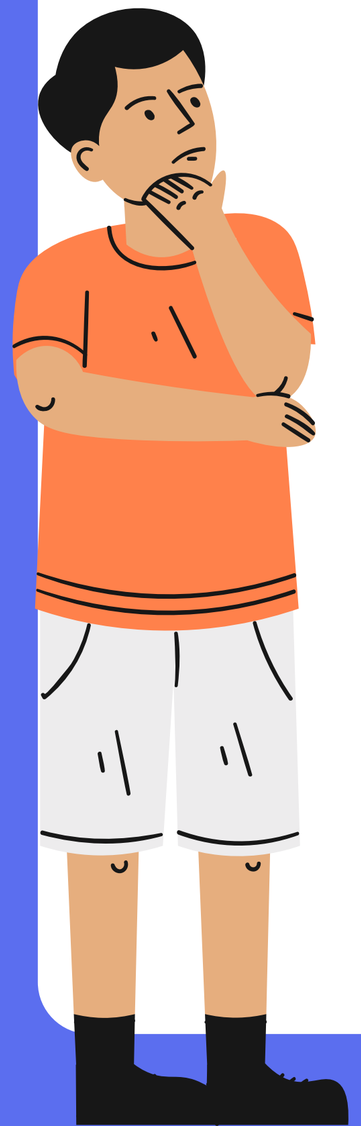
Working


AC power supply
Relay
Motor Pump
Soil moisture sensor
Rain sensor
Temperature & humidity sensor

Benefits

BENEFITS OF SMART IRRIGATION SYSTEM

- Increase of Production.
- Conservation of Water.
- Lowered Operation Cost.
- Quality of Production
- Improved Livestock Farming
- Remote and Equipment Monitoring

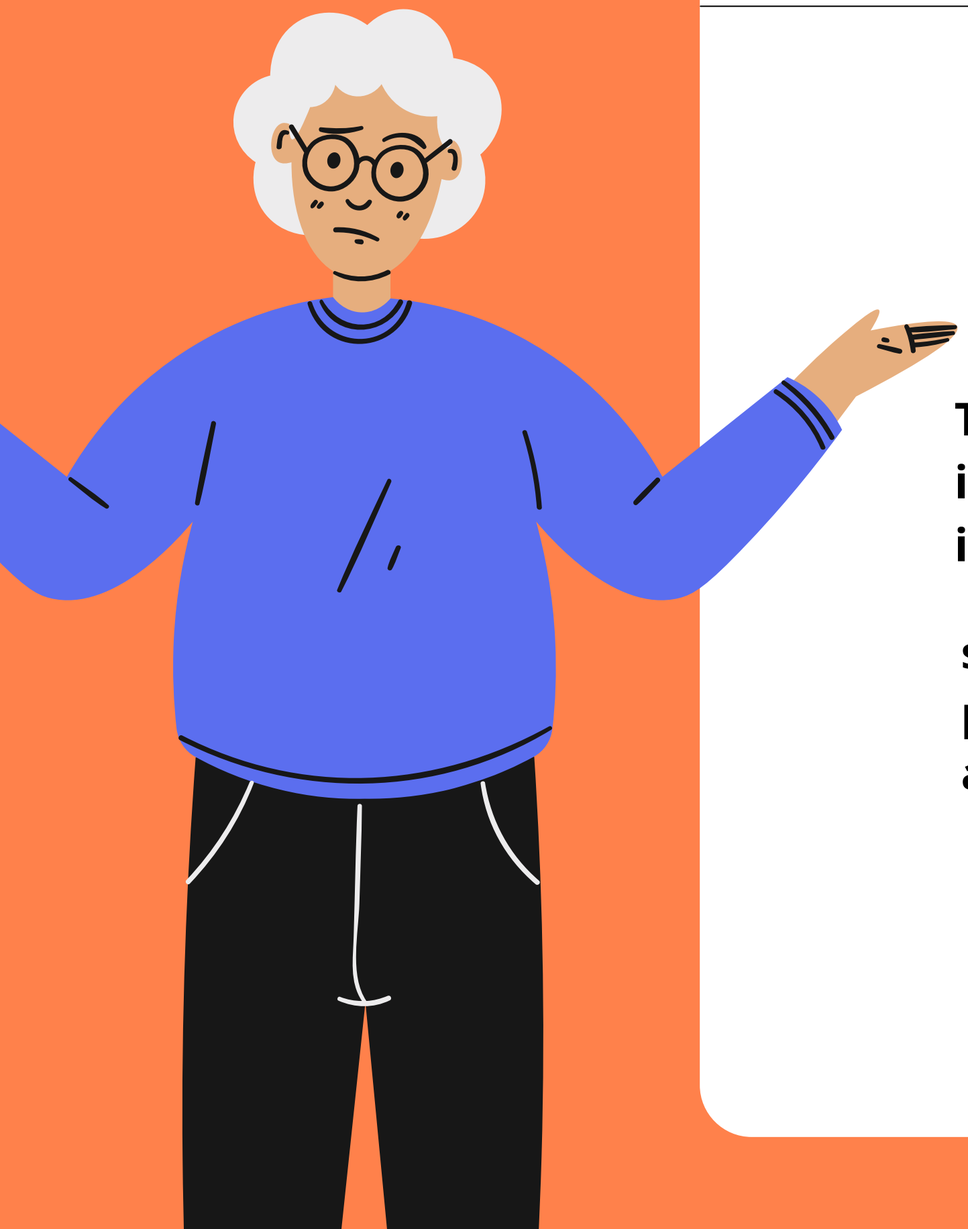


Future Scope

Adding a feature for controlling and monitoring the sprinkles, checking the faults in the irrigation network and correcting them remotely .

Watching the live working of an integrated system in field area by pc/mobile.

Making an intelligent system, where in the system predicts user actions, rainfall pattern, time to reap and much of more features which may make the system not to depend on human operation.



Conclusion

The system uses information from soil moisture sensors to irrigate soil which helps to prevent over irrigation or under irrigation of soil thereby avoiding crop damage.

system to monitor moisture levels in the soil was designed and the project provided an opportunity to study the existing systems, along with their features and drawbacks.


THANK
YOU

Let's take a quick break!

The host will take a moment to determine the winner.

And the winner is...

Reese

8 points

Thank you for coming!

Join us for another game night next Friday!

Game Resource Page

Use these icons
in your game. Enjoy!

Game Resource Page

Find the magic and fun in presenting with Canva Presentations. Press the following keys while on Present mode!

B for blur

C for confetti

D for a drumroll

O for bubbles

Q for quiet

X to close

Any number from 0-9 for a timer