CICE PROJECT EXHIBITION

ODD SEMESTER 2024-25

Smart Irrigation System Using Arduino UNO

Apparatus / Components Used:

Arduino UNO, Breadboard, Jumper wires, 5V Relay board, Mini water pump, LCD Screen, DHT11 sensor module, Humidity sensor, Rain drop sensor, 9V battery setup **Software used:**

Arduino IDE

The "Smart Irrigation System Using Arduino Uno" project improves agricultural irrigation by using an Arduino Uno, soil moisture sensor, rain sensor, DHT11 sensor, and a water pump. It monitors soil moisture levels and triggers the water pump when moisture is low. A rain sensor conserves water by pausing irrigation during rainfall. The Arduino Uno processes data from the sensors and controls the water pump, ensuring efficient water distribution. A

relay converts high voltage AC to DC for the circuit.

Design the Circuit:

An Arduino Uno reads data from a soil moisture sensor and activates a relay to power a water pump when the soil is dry. Optional sensors like a DHT11 enhance functionality. The system is powered by a 5V supply, and a Liquid_Crystal_I2C display allows remote monitoring. Components are connected on a breadboard for prototyping, with the Arduino Uno connected to a laptop via a Type B USB cable. The Arduino IDE is used to upload the code.

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