

Automated Microcontroller-Based Irrigation System

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Abstract: Traditional irrigation systems do not take into consideration the conservation of water. Therefore, automating the plant watering systems to reduce water wastage and loss would be key to water conservation as a means of making use of water wisely and responsibly. In this chapter, a smart irrigation system that helps control the amount of water applied to crops is proposed and developed. The system controls the ON/OFF state of the water pumping motor based on the soil moisture sensor reading. Other sensors incorporated in the system are the water level sensor and light dependent resistor. The system leverages on the Arduino Uno microcontroller development board to collect input signals from the three sensors. The water pump operates depending on the value of the output signal received by the relay module. This technique of watering is feasible and very affordable and reduces human intervention in field watering.

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