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Automatic Plant Watering System using Arduino

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Abstract: *The Automatic Plant Watering System using Arduino is an innovative and efficient solution designed to optimize water usage in agriculture, gardening, and household plant care. With the increasing need for water conservation and the challenges of maintaining plant health due to irregular watering, this system provides a smart and automated approach to irrigation. It eliminates the dependency on manual watering by continuously monitoring soil moisture levels and supplying water only when necessary.*

This system is built around the Arduino microcontroller, which acts as the brain of the operation. A soil moisture sensor is used to detect the moisture content in the soil in real time.

When the moisture level drops below a predefined threshold, the Arduino triggers a water pump through a relay module to irrigate the plant. Once the desired moisture level is achieved, the system automatically stops the water flow, preventing overwatering and water wastage.

The design of the system is simple, cost-effective, and user-friendly, making it suitable for small-scale farmers, home gardeners, and plant enthusiasts. It can also be enhanced with additional features such as LCD display, IoT connectivity, or mobile app control for remote monitoring and control.

This system ensures that plants receive the right amount of water at the right time, promoting healthy growth and improving crop yield.

Overall, the Automatic Plant Watering System using Arduino is a sustainable and reliable solution that contributes to efficient water management and reduces human effort, making it an ideal choice for modern smart agriculture and home automation applications..

Keywords*:* Efficient Water Management

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