

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND DEVELOPMENT OF  
AUTOMATIC SYSTEM FOR  
WATERING PLANT**

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## **ABSTRACT**

In today's era, irrigation problems in agricultural systems often occur due to several factors. This product can reduce the rate of problems for gardeners such as control the rate of water wastage due to hot weather. This project focuses on the design and development of an automatic plant watering system tailored for home gardening enthusiasts. By leveraging components such as the Arduino Uno R3 microcontroller, mini water pump, 5V single relay module, and soil moisture sensor, the system aims to streamline the maintenance of plants by ensuring optimal soil moisture levels. The core functionality involves real-time monitoring of soil moisture using the sensor, with the Arduino Uno R3 serving as the central control unit. Upon detecting soil moisture falling below user-defined thresholds, the system activates the mini water pump through the 5V single relay module to dispense water to the plants. The project emphasizes automation, reducing the manual effort required for plant care. The user-friendly interface allows easy configuration of watering parameters, making it accessible for home gardeners. Moreover, the cost-effective nature of the components employed ensures affordability and widespread accessibility, contributing to a practical solution for efficient and hassle-free home gardening.

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