

ABSTRACT

The use of technology in agriculture continues to evolve in order to improve efficiency and productivity. One innovation that can be applied is an automatic plant watering system. This study aims to design and implement a time-based automatic irrigation system using key components such as a 12VDC water pump, Tiny RTC I2C module, and relay. The system operates based on a predefined schedule, where the RTC module functions as the real-time clock, the relay acts as an electronic switch, and the water pump serves as the irrigation device. When the scheduled watering time arrives, the relay activates the pump to automatically water the plants. This system enables more efficient and consistent watering without requiring human intervention. Testing results show that the system performs effectively in delivering water according to the programmed schedule. It is expected to serve as a practical solution for supporting modern agriculture that saves both time and labor.

Keywords: automatic Watering, 12VDC water pump, relay, Tiny RTC I2C