

ABSTRACT

Urban farming (urban farming) is an effort to utilize minimal space in urban areas in order to produce agricultural production using technology. One of the crucial problems in urban farming is the control of lighting for plants. The intensity of light that is too strong can damage the enzymes due to photosynthesis disturb the metabolism of organisms, especially the ability in synthesizing proteins. An alternative solution that can be done to solve this problem is by controlling the light intensity for the plant using automatic blinds.

The system has been implemented consisting of five main components: light sensor, Arduino microcontroller system, DC motor, L298N motor driver, and NodeMCU ESP8266. The sensor will read the intensity value of the light around the plant and transmit data to the microcontroller system. Then the microcontroller system will process the data and will control the curtain roof automatically. In addition this tool is also designed to be manually controlled remotely using android apps on smartphones.

The experimental results show that the system can be configured in manual mode, automatic, and schedule. When the manual mode in setting then Arduino will wait for command to close or open the curtain from user, automatic mode then Arduino will open or close the curtain based on result of measurement from lux sensor, schedule mode then NodeMCU will run time will give command to Arduino according to time Which has been determined by the user.

Keywords: Sensor Lux BH1750, Microcontroller, Module Esp8266, Smartphone

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