

ABSTRACT

Human wants an easy life in their daily activities. The example is the windows used for air circulation in their house. Sometimes, they forget to open and close the windows and curtain in the morning or night. This situation needs a system that can open and close curtains and windows automatically.

The automatic windows and curtains system designed using several components. The components are Arduino Uno as microcontroller, LDR (Light Dependent Resistor) as light sensor, Anemometer as wind sensor, Servo motor to move the window, and Stepper motor to move the curtains. The system makes Arduino Uno collect inputs from LDR and Anemometer. Based on the inputs, Arduino Uno moves the Servo motor and Stepper motor. To move the Stepper motor, the system uses fuzzy logic based on LDRs while servo motor moved based on the wind speed that measured by anemometer.

The system has been able to close the window by 36° based on the wind speed of 100% and open the window by 158° based on the wind speed of 11.93% and move curtain using fuzzy logic based on the light condition inside and outside the room. The system also able to measure the length of the curtain so it can work on different curtain lengths.

Keywords: *Arduino Uno, Servo Motor, Stepper Motor, Anemometer, LDR (Light Dependent Resistor).*