ABSTRACT

Dissipation of electric power is often a problem in the community, whether in buildings, rooms, or public facilities. The lamp usage time that is too long is one of the contributing factors. In this manual era, many users neglect the importance of managing lamp usage time. In order to overcome this, an automatic light control system based on the Passive Infra Red (PIR) sensor was created. The PIR sensor cannot detect users who tend to be silent, therefore the Time delay application will be very suitable to be applied in a room with little activity. To further support the use of lamp time, a Time delay scheme is added to the control system, where the Time delay will cover the shortcomings of the PIR Sensor-based control system which is too quickly separated from the detection system if people tend not to move even though it is still in the sensor working area. Therefore, a control system design will be carried out using the Time delay method based on Fuzzy logic. Fuzzy logic is used to determine the time delay based on the number of activities detected by the sensor. While the time delay representation is the result of research observations which have set range criteria between input and output is from short (0-10) minutes, medium (5-20) minutes, to long (15-25) minutes. Overall the operation of the control system was successful when viewed from the workflow factor, where the results of data analysis show the system has a percentage of implementation effectiveness and output accuracy at time delay of 58.33% and 95.55%.

Keywords: Automatic light control system, Time delay, PIR sensor, Fuzzy