

Abstract

The problem of determining the waking time from sleep using an alarm in general is not based on the current phase, where the phase to wake up is called the phase of hypnagogia. The phase is divided into NREM and REM phases, so in this study the proposed solution is to create a system that determines the best time to wake up from sleep based on the phase that should be by determining the characteristics of the user. The system is built using fuzzy logic to determine user characteristics based on two parameters, namely temperature and motion which uses PIR and MLX90614 sensors (temperature sensors). The system built aims to wake up users using lights and to find out how many lights are needed. From the results of testing the system runs well according to the design that has been made, so that the system produced in this study proved to be able to determine the characteristics of the user.

Keywords: PIR, lamp, the characteristics of the user, Fuzzy Logic, NREM, REM