Design and Development of House Automation System with Long Distance Control Based on Mobile Application and Arduino

Alim Gunawan, Rinabi Tanamal, B.Bus., M.Com.
Universitas Ciputra
r.tanamal@ciputra.ac.id

Abstract

The usage of Information and Technology in Indonesia is increasing from year to year. Internet is growing rapidly and prices offered by Internet providers are getting cheaper over time. In addition, smart phone users in Indonesia is also growing in number. This leads to the dependence between the user technologies with information technology systems. In the emerging era, a lot of activities that can be completed by the information system. This makes the users of such technology was spoiled by the presence of new technologies. This prompted the authors to research and design a home automation system that can be used by the user to adjust the electricity consumption by appliances that use electricity at home by using android application that is embedded in the mobile device so that the electricity consumption in the home is not excessive and needed when necessary. Design of the home automation system designed from data collection to conduct interviews regarding the structure of electricity at home, making home electrical schematic design, code generation commands to the microcontroller, the design of the web server for communication with mobile application to microcontroller, the design of the server for home automation. It is used to schedule each electrical appliance that is registered with the manufacture of a mobile application for home automation system that will be embedded in mobile devices and the Android Operating System.

Keywords: mobile, house automation, electricity

1. Chapter I Introduction

1.1 Background Analysis

Excessive power consumption is not efficient given The electricity prices in Indonesia has a significant increase and energy waste also less efficient for the state of our Earth remembering that a lot of people who need that energy. In this growing era, many scientists are trying to research the absence of energy waste by researching to improve the energy substitution in the Earth’s energy cycle.

The Role of Information Systems in this case to be one solution. For example, an appropriate information system can be useful to help users organize the use of peripheral devices that are within range of the user's home. With this information system, hopefully the use of electricity at home user is more efficient.