UNIVERSITI TEKNOLOGI MARA

HOME AUTOMATION AND ENERGY MONITORING SYSTEM WITH IOT

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ABSTRACT

By using Internet Of Things (IOT) and microcontroller, electrical appliances can be controlled anywhere and every time and the main crucial problem is the energy usage of the house are high because of small mistake such as forgot to switch off the switch. The objective of the report is to design and simulate (Smart Home Automation System with Energy Monitoring and Control For Electrical Appliances) using proteus 8 professional. This project aims to design a smart home system with energy monitoring by using Arduino Microcontroller. The input will send information to the Arduino and output will outcome and can be controlled by laptop and handphone and the input for this project is IR sensor, Voltage sensor, Current sensor and temperature sensor and Bulb, Fan, Socket, and relay for the output. All electrical appliances can be control by smartphone and energy usage of the appliances can be monitored and electrical bill can be reduced from time to time

TABLE OF CONTENT

Page

CHAPTER 1

INTRODUCTION

1.1 Introduction

This project is totally to make it easier for the owner of the house to controlled their electrical appliance when the owner not at home and to reduce the energy usage of electrical appliances in the house which is, when the energy usage of the house are display, owner can identify which appliance are use the higher electric and reduce it on the next month

The main issue is the appliances are hard to control when the owner goes out from the house and the bills are high and expensive. Therefore, within this project, the appliances in the house will be easy to control it anywhere and anytime using the smartphone and the energy billing of the house can be reduced.

Furthermore, the main objective of this project is to to design and simulate (Smart Home Automation System with Energy Monitoring And Control For Electrical Appliances)using proteus 8 professional and any simulation software and to build and develop (Smart Home Automation System with Energy Monitoring and Control For Electrical Appliances) using a ESP32 as a microcontroller and communication device, (Current sensor) as a inputs, (Bulb, Fan, Socket, relay and LCD display) as the output components.

Lastly, this project can help the user to make sure there are no electrical appliances switched on when there are no people in the house, and it can reduce the energy usage of the house. So, it is important to society and the environment.