

UNIVERSITI TEKNOLOGI MARA

**HOME COMFORT AND SECURITY
POWERED BY AUTOMATIC
SENSOR**

**MUHAMMAD AIMAN QUSYAIRI BIN MUZAL
2021821662**

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ABSTRACT

This project introduces a comprehensive smart home automation system that seamlessly integrates various IoT devices, including motion sensors, temperature sensors and light dependent resistor (LDR) sensors through a centralized control hub. The sensors used include temperature, motion and light dependent resistors (LDR), enabling monitoring capabilities and providing information to the user. The main goal of this system is to improve the comfort, efficiency and safety of the entire home environment by managing the lighting, temperature control, and movement safety system accurately and safely.

The implementation of this project shows a cohesive combination of various IoT components, which can build an innovative system that can be adapted in various situations. Through the integration of temperature sensors, the system ensures optimal temperature control, contributing to increased energy efficiency. Motion sensors enable precise movement monitoring, enhancing both security and automation functions. In addition, the use of light dependent resistor (LDR) facilitates automatic intelligent lighting control, promoting a comfortable and energy efficient atmosphere.

As part of the future work, this project aims to produce a good compatibility between the components as well as to be able to further improve the efficiency of energy use. Additionally, a major focus will be on addressing security and privacy concerns in the home environment. By expanding the scope of the device range, this smart home automatic sensor system aims to provide a holistic solution that not only adds daily convenience but also prioritizes energy saving and user safety

TABLE OF CONTENT

	Page
CONFIRMATION BY PANEL OF EXAMINERS	
AUTHOR'S DECLARATION	1
APPROVAL	2
ACKNOWLEDGEMENT	3
ABSTRACT	4
TABLE OF CONTENT	5-6
LIST OF SYMBOLS	7
LIST OF ABBREVIATIONS	8
CHAPTER ONE: INTRODUCTION	
1.1 Research Background	9
1.2 Problem Statement	10
1.3 Objective	10
1.4 Scope of Study	11
1.5 Project Contribution	12
CHAPTER TWO: LITERATURE REVIEW	
2.0 Introduction	13
2.1 Research Projects	13-14
CHAPTER THREE: RESEARCH METHODOLOGY	
3.0 Introduction	15
3.1 Hardware Development	
3.1.1 Block Diagram	16
3.1.2 Components	16-20

CHAPTER ONE

INTRODUCTION

1.1 Research Background

Smart home automation includes the use of a combination of advanced technologies to monitor and control areas around the home, including lighting, temperature and security systems. This orchestration is achieved through the seamless integration of Internet of Things (IoT) devices, where the device functions to communicate and interact with other sensors intelligently. Unlike conventional home management systems, where user intervention is prioritized, IoT absorption can empower automation to be central to all new systems.

Essentially many smart home projects rely on manual user input for control and customization. As the emergence of IoT marks a transformative shift, enabling automated responses to occur. Change from manual control to automatic has significant implications for the user and the overall effectiveness of the smart home system.

Smart home automation, facilitated by IoT, offers many benefits to consumers. Among other things, this system contributes to higher energy efficiency, cost reduction, and strengthened home security. In addition, this leads to increased operational efficiency and streamlined workflows. next, IoT devices allow users to control the system remotely and can produce a monitoring monitor, allowing home owners to manage and monitor their home from anywhere. This can create a system that not only helps in daily affairs but also creates a more responsive and innovative life.