

UNIVERSITI TEKNOLOGI MARA

**AUTOMATIC HOME CONTROL
SYSTEM**

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ABSTRACT

Using components including an Arduino Uno, an SG90 servo motor, LEDs, buzzers, rainwater sensor modules, LDR modules, and motion sensors, the research attempts to create an automatic home control system. The system's goals are to improve comfort, energy efficiency, and security in residential areas through the effective application and assessment of smart sensors and an automated home control system. The research also aims to create a solid platform, offer insightful information, and optimise smart home technologies. The ultimate objective is to design a smart, adaptable, and sustainable home environment that raises the standard of living and makes life easier. This project aims to implement and evaluate smart sensors and a functional automated home control system. The goal of this system is to seamlessly integrate and automate various household equipment and gadgets to maximise residential environments' comfort, energy efficiency, and security. The goal of this research is to optimise smart home systems through the provision of significant insights and the development of a dependable and user-friendly platform. Aside from that, the goal is to leverage automation technologies to build a sustainable, intelligent, and adaptable home environment that raises people's quality of life and makes things easier.

Keywords -Automatic Home Control System, Arduino Microcontroller, smart home technology, sensor integration, automation, energy efficiency.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

The growing popularity of home automation systems, which have been shown to improve comfort and quality of life, forms the basis of the study for the Automatic Home Control System. The application of contemporary technology, along with the incorporation of intelligent sensors and automated control systems, highlights the field's interdisciplinary nature and highlights its potential to have a big social impact.[4]

The advancement of technology in the domain of home automation is congruent with the development of the Automatic Home Control System. By emphasising the practical installation and assessment of these systems, the research adds to the body of information already in existence while also aiming to produce a robust and user-friendly platform for smart home automation and significant insights.[5]

The Automatic Home Control System exhibits a multidisciplinary approach through the integration of multiple components, including a motion sensor, rainwater sensor, servo motor, LED, buzzer, and LDR. This technique combines elements of computer science, electrical engineering, and home automation. This multidisciplinary approach enhances research and development while also mirroring the intricate and networked structure of contemporary smart home systems. The system seeks to provide a comprehensive solution that tackles various facets of home management, including security, convenience, and energy efficiency, by utilising these varied technologies.

1.2 Problem Statement

The Automatic Home Control System attempts to solve a number of issues that come up when homeowners are trying to manage their properties. The inability to pick up garments in the rain is one of the problems, particularly when homeowners are working outside the home. A rainwater sensor module, which can sense rain and automatically