

**UNIVERSITI TEKNOLOGI MARA**

**MODE ROOM WITH HOME AUTOMATION  
TECHNOLOGY**

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Thesis submitted in fulfillment  
of the requirements for the degree of  
**Diploma of Electrical Engineering**

**Centre for Electrical Engineering Studies  
College of Engineering**

**JANUARY 2024**

## ACKNOWLEDGEMENT

BISMILLAHIRRAHMANIRAHIM. In the name of Allah, the Most Gracious and Most Merciful, Alhamdulillah, all praises to Allah for the strengths and His blessings in completing this thesis. Upon completion of this thesis paper, I want to express my gratitude to a lot of individuals that helped me during this journey. Without their aid, I would not be able to complete this project in the time given.

I extend my heartfelt appreciation to my brilliant supervisor Sir Ezril Hisham Bin Mat Saat, for their invaluable guidance, unwavering support and constructive feedback throughout the process of conducting and writing this thesis paper that contributed to the success of my study paper.

I would also like to thank the rest of my family, my father, Abdul Kadir Bin Julkanain and my grandmother, Bunga Suara Binti Abdulama for the constant prayers and encouragement from the beginning of my journey in diploma up until now. Not to forget my siblings, Adam Muhammad and Nur Alya Maysarah for their moral support, thank you.

I sincerely thank to all the lecturers and staffs of Electrical Engineering Department in UiTM Pasir Gudang for the indirectly guidance and supports. Biggest hugs to all of my friends in this journey, Olivia who never leave my side, my long-distance friends, Alma, Haza, Shafiqah and Fatin—who have consistently comforted me with their words whenever I felt lost in this journey. Their unwavering support has kept me on track.

*“Last but not least, I wanna thank me for believing me, I wanna thank me for doing all this hard work, I wanna thank me for having no days off. I wanna thank me for... for never quitting. I wanna thank me for always being a giver and tryna give more than I receive. I wanna thank me for tryna do more right than wrong. I wanna thank me for just being me at all times.”*

## **ABSTRACT**

The mode room is an advanced home automation system that is influencing the way we interact with our living spaces. This project provides an overview of the mode room with home automation technology, emphasizing its essential features, benefits and the underlying technologies that enable it. The mode room offers a smart environment that adjusts to the user's preferences and improves comfort and convenience in the house by seamlessly integrating numerous gadgets. Through smart control mechanisms, the mode room acts as a versatile environment that adjusts to diverse demands such as leisure, work, or sleep. This mode room marks a huge development in home automation, allowing homeowners to transform their living areas into intelligent, responsive, and highly functional settings.

*Keywords—Mode Room, Living Spaces, Home Automation, Smart Control*

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Humans today face numerous problems as they go about their daily lives. Hence, they in need an environment that will allow them to focus more on their work or simply for them to obtain the rest that they require. According to research [9], there is about 58% of people aged 18-34 that suffer poor focus and concentration, 45% aged 35-54 and 35% for aged 55 above. In addition, those who are sleep deprived is 7% to 19% in accordance to the National Institutes of Health [7]. The fast growth of technology in recent years has permitted the establishment of intelligent and networked devices within our houses. The concept of mode room automation has received a lot of attention recently, solely due to the increased desire for comfort, convenience, and energy economy. This system advances home automation by providing a comprehensive solution that integrates multiple devices and sensors into a coherent and user-friendly environment.

Conventional rooms are incapable of adapting to individual preferences and demands. They do not offer experiences for tasks such as leisure, work, entertainment or sleep. A mode room that can dynamically modify its ambiance, lighting, and temperature in producing a personalized experience is required. To automate and improve the mode room, a more complex automation system is required to automatically assess sensor data, user preferences, and ambient conditions.

This project is made up of three main parts, a microcontroller which is NodeMCU, input-output components, and user interface on the Blynk application. The microcontroller acts as the system's centre, connects to the Internet, receiving sound recognition from the sound sensor and temperature data from the temperature sensor, interpreting data and delivering commands to output components which are LED light, LCD display, buzzer and DC motor. User interface in the Blynk application tell the user the temperature of the room that allows user to plan ahead for their day. The mode room system has an abundance of elements that are intended to improve comfort and convenience. Lighting control, for example, allows user to control the switching of the