



**UNIVERSITI TEKNOLOGI MARA**

**MODERNIZED PARKING FOR  
DISABLED PEOPLE**

**MUHAMMAD AZHAD HAZIQ BIN  
HAMALY YADY**

**DIPLOMA OF ELECTIRCAL  
ENGINEERING**

**FEB 2024**

## **ABSTRACT**

Today, ensuring accessibility and inclusivity has become increasingly important. It is crucial to provide equal opportunities for all individuals, including those with disabilities. Among the major challenges faced by disabled people, finding accessible parking spots is a significant issue. Fortunately, modern technologies like the Internet of Things (IoT) offer innovative solutions. This report focuses on designing a disabled-friendly parking system that incorporates sensors and IoT capabilities. The project entails several inputs, including infrared sensors and a camera, with Arduino serving as the main controller. The system's first objective is to detect available parking spaces using the sensors and provide real-time information. Additionally, the camera assists in monitoring the parking area and ensuring compliance with disabled parking regulations. The second part of the project involves displaying the availability of parking spots and controlling a motorized mechanism for assisting individuals with mobility challenges. By implementing this disabled-friendly parking system, we can greatly improve the accessibility and convenience for individuals with disabilities. It not only addresses the challenge of finding accessible parking spots but also enhances the overall inclusivity of our society.

## **ACKNOWLEDGEMENT**

I wish to express my profound appreciation to the individuals who have played integral roles in the realization of this project. Foremost, my heartfelt gratitude goes to Siti Aliyah binti Mohd Saleh my project supervisor, for her unwavering guidance, invaluable expertise, and continual support. Her insightful feedback has been a guiding force, significantly shaping the trajectory and quality of this project. I extend my acknowledgment to the faculty and staff of UiTM Pasir Gudang, whose commitment to academic excellence has provided an enriching and supportive environment. Their dedication to fostering a conducive learning atmosphere and providing essential resources has been indispensable to the project's success. A special mention of gratitude is extended to the participants who willingly devoted their time, shared their knowledge, and offered invaluable insights. Their contributions have played a pivotal role in enhancing the depth and breadth of the project's findings. In conclusion, my sincere thanks go to all those who have been part of this journey, contributing their time, expertise, and support. It is with deep appreciation that I acknowledge the collaborative efforts that have led to the successful completion of this project.

# TABLE OF CONTENT

	<b>Page</b>
<b>AUTHOR’S DECLARATION</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT</b>	<b>v</b>
<b>TABLE OF CONTENT</b>	<b>vi</b>
<b>LIST OF TABLES</b>	<b>viii</b>
<b>LIST OF FIGURES</b>	<b>ix</b>
<b>LIST OF ABBRIVIATION</b>	<b>xi</b>
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.1 Research Background	1
1.2 Objectives	2
1.3 Problem Statement	3
1.4 Scope of work	4
1.5 Project Contribution	5
<b>CHAPTER TWO: LITERATURE REVIEW</b>	<b>5</b>
2.1 Introduction	5
2.2 Previous Related Project	6
2.2.1 Automatic Car Parking System	6
2.2.2 The Smart Parking Management System	7
2.2.3 IoT assisted Parking System (IPS) for Smart Intelligent Cities	8
2.2.4 Disabled Parking System for Smart City	10

# CHAPTER ONE

## INTRODUCTION

### 1.1 Research Background

In the dynamic landscape of contemporary society, the call for accessibility and inclusivity has become more pronounced than ever. The pursuit of equal opportunities is no longer confined to specific domains but extends across the entirety of human experience, with a heightened emphasis on addressing the unique needs of individuals with disabilities. Amidst the multifaceted challenges faced by this demographic, the struggle to find accessible parking spaces emerges as a formidable hurdle, significantly impacting their daily lives. Thankfully, the intersection of innovation and technology, particularly through the advent of the Internet of Things (IoT), has opened doors to novel solutions. This report delves into a pioneering endeavour: the development of a disabled-friendly parking system that harnesses the capabilities of sensors and IoT. The project intricately involves the integration of infrared sensors, a camera, and Arduino as the central controller, forming the backbone of a transformative initiative aimed at revolutionizing parking accessibility.

At its core, the primary objectives of this system are twofold. Firstly, it endeavours to achieve real-time detection of available parking spaces, leveraging advanced sensor technologies. Secondly, the system is designed to ensure strict compliance with disabled parking regulations, addressing the current gaps in enforcement and understanding. However, the project goes beyond mere detection and compliance – it expands its scope to the creation of a mechanism that not only displays parking spot availability but also actively assists individuals contending with mobility challenges. The implementation of this disabled-friendly parking system holds the promise of a tangible improvement in the lives of individuals with disabilities. The potential impact is not confined to the alleviation of the immediate challenge of locating accessible parking; it resonates on a broader scale, contributing to the overarching goal of fostering a more inclusive society.