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UNIVERSITI
TEKNOLOGI
MARA

**UNIVERSITI TEKNOLOGI MARA
CAWANGAN JOHOR KAMPUS PASIR GUDANG**

FINAL YEAR PROJECT (EEE368)

**AN AUTOMATIC GRASS CUTTING ROBOT USING
ARDUINO**

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ABSTRACT

In order to maintain lawns effectively and autonomously, this study describes the construction of an automatic grass-cutter robot. Ultrasonic sensors, an ArduinoUno microprocessor, and DC gear motors driven by a Lipo Battery are only a few of the sophisticated technological components used by the robot. It can correctly cut the grass while navigating the yard and spotting obstructions. The robot travels along a predetermined path to guarantee that the entire lawn is covered and that the grass is always the same length. Robotic collision avoidance is made possible by the integration of obstacle detection. The concept offers a timeand money-saving method for maintaining lawns while addressing the desire for automation and smart home solutions. The successful construction of the prototype demonstrates a useful and practical robot that can cut grass, with the potential for mass use.

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CHAPTER 1

INTRODUCTION

1.1 Background

Regular grass clipping is frequently required for lawn and garden upkeep; this can be a time-consuming and physically taxing task. However, there is a growing interest in creating automated solutions for effective lawn management due to the development of robotics and cutting-edge technology. The automatic lawn cutting project intends to fill this gap by engineering and creating a robotic machine capable of accurately trimming grass while independently navigating a predetermined region.

This introduction emphasises the project's importance in terms of time and effort savings vs conventional manual lawn mowing techniques. Robotic device use eliminates the need for human intervention, which is especially advantageous for people who have extensive lawns or gardens to manage. The desire for automation and smart home solutions is also on the rise, which highlights the significance and use of autonomous lawn cutting initiatives in contemporary life.

The limitations and difficulties of manual lawn upkeep are also highlighted in the introduction, including how timeconsuming it is and the dangers of accidents or injuries while using conventional lawn mowers. These difficulties can be resolved by