UNIVERSITI TEKNOLOGI MARA

AUTOMATIC CAT FEEDER USING ESP32 WITH IOT APPLICATION

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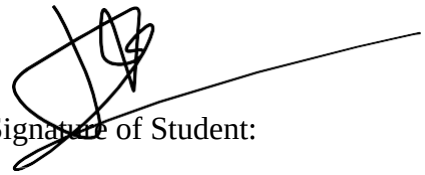

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ABSTRACT

Nowadays, humans are too busy with their daily life which leads them to find it difficult to properly feed and care for their pets. Thisproject aims to develop an automatic cat feeder using Arduino with IoT application to provide automated and controlled feeding for cats. The mainobjective is to create a system that dispenses precise portion of cat food and drink at a desired times to ensure the cat get a proper nutrition and feeding consistency. The project uses a wide variety of input and output. The input includes user defined feeding schedules through the IoT application and Ultrasonic sensor to sense the level of food and drink for the cat, while the output consists of a motor-driven mechanism thatdispenses the cat food and drink, LED to show the food level and buzzer to indicate that the feeding process is starting. Simulation through softwarehas been done and the findings indicate an accurate feeding operations andreliability. This study contributes to help those busy with their daily life studying and working in improving pet care by enabling pet owners to automate and personalize feeding routines, ensuring their cats' well-beingeven in their absence. Future work could be done in improving the projectfunctionality by involving incorporating some additional features like food level monitoring, activity tracking, and integration with smart home systems. In conclusion such problems could be encountered by using an automated cat feeder system by using Arduino with IoT application.

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CHAPTER ONE
INTRODUCTION

1.1 Project Overview

The increasing popularity of pet ownership has boosted the demand for efficient and dependable feeding options. According to statistics, based on the year 2020, nearly 42% of households in the Malaysia own at least one cat and 33.8% of those cats are obese, implying a high demand for simple and automated cat feeding systems. [1] Traditional feeding methods frequently lack precision and fail to maintain consistent feeding schedules, potentially leading to health problems for cats such as overeating or malnourishment. To overcome these issues, the goal of this project is to create an automatic cat feeding using ESP and an IoT application. The goals include ensuring precise portion control and consistent feeding schedules, allowing customization of feeding parameters and enabling remote monitoring and control. There are many existing methods of feeding the pet, such as gravity-based or timed-release feeders, have drawbacks. Gravity-feeders provide a steady supply of food, which can contribute to overeating and obesity in cats with poor self-control. Scheduled feeding Is provided via timed-release feeders, although they sometimes lack precision and struggle to accept varied amount sizes or adjust to changes in feeding schedules. These constraints lead to poor nutrition, unpredictable feeding schedules, and potential health problems for cats. The significance of this work stems from its potential to improve the general well-being of cats and alleviate pet owners' fears. The automatic