UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF AN AUTOMATED CAT FEEDER

ADREANNA MAISARA BINTI AZMAN

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ABSTRACT

In this project, an automated cat feeder with integrated obstacle detention and food dispensing via a servo motor and a water level sensor for water dispensing is designed, built, and tested. The system's goal is to give pet owners a dependable and approachable way to make sure their cats are fed on time but not excessively and have access to enough water. The obstacle sensor provides a safe and effective food distribution by averting jams and mechanical failures, while the water level sensor sets off the water pump to deliver water based on pre-set water levels. To choose the right parts, comprehensive engineering calculations were carried out, taking into account the load and tension placed on a straight beam. The feeder was built using a thorough fabrication process that includes exact cutting of polycarbonate sheets, cutting and drilling the angle aluminium bar and delicate assembly of the electrical components. Thorough testing and calibration were also necessary for the project in order to guarantee the precision and dependability of the dispensing systems. The finished product improves pet owners' convenience and their cats' well-being by providing a reliable, effective, and safe feeding solution. In addition, the feeder's durability and portability were important design factors that made sure it fulfilled the demands of regular use. This project highlights areas for development for further iterations and effectively uses sensor technology to automate pet care.

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INTRODUCTION

1.1 Background of Study

Pet owners are turning to automated cat feeders more and more because they are practical as they give them a sense of ease because these devices make sure that their pets are fed on time and properly whenever their owners are away from home. Within these instances, automated cat feeders provide a particular option catered to the requirements of feline friends. This background research examines the design, operation, and possible advantages of an automated cat feeder system that was developed as a final year project.

Traditionally, cat food and water are manually dispensed from small plates or bowls, as shown in Figure 1.1. Though the main function of these bowls is to store food, they are missing the typical automation and control elements seen in modern automated feeders. Owners of pets must manually refill the bowls at scheduled times, which frequently results in irregular feeding schedules and portion levels. Furthermore, conventional feeders could be incapable of meeting specific nutritional needs or feeding preferences and provide little control over portion intake. Additionally, this can also lead to dehydration if the pets do not receive enough water.

Figure 1.1 Traditional Food and Water Bowls