PET FIDDING ROBOT

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ABSTRACT

Nowadays most of us have pets at home. this pet should be taken care of properly. Their mealtime is important because they have become part of the family. however, some people fail to pay attention to their pets because they are so busy that they cannot afford to feed them on time. This paper addresses the above problem by introducing the Smart Pet Feeder to ensure that your pet is fed on time. This Smart Pet Feeder consists of food storage, servo motors, dispensers, dining bowls and more. It also has the Arduino to control operations automatically, as well as possible to create more high-tech by adding cameras to monitor the activities of their pets. Smart Pet Feeder has an auto-generated machine that can feed your pet according to the time and quantity specified

Keywords—Atmega328, Servo, Motor Driver.

INTRODUCTION

Automated pet feeder is one of the innovative technologies for feed pet. It will help pet owner to take care of their pet while they are not at home. Even the owners are not at home, they still can feed their pet. Automated pet feeder is built to help pet owner taking care of their pet. Automated pet feeder is one of the pet feeders that will be controlled by a wireless infra-red remote control. The automated pet feeder will be automatically dispensing predetermined amounts of food at the exact times user choose with controlled by a wireless infra-red remote control. As pet lovers, user should understand those pets also need a proper diet management. Sometimes, the responsibilities of life inhibit pet owners from properly caring for their pets. Whether user away from home unexpectedly or simply would like one less chore to worry about, user can feel secure that the beloved pet will be cared for and fed on time, every time. Pet care should be fun, not burdensome, and so the goal of this project is to assist owner with pet care by providing an automatic pet feeder. The purpose of the project helps the owner of the pet feeding their pet on time even when they are not at home. Other than that, it also can help the owner know the diet of their pet. Knowing the diet of the pet is especially important for the owner to make sure that the pet is in good health. This system assists pet owner to feed the pet. The system act in two ways, one is feeding the pet and sends the feeding information to owner. After it feed the pet, the system will stop responding for certain time to make sure that the pet does not eat too much.

OBJECTIVES

The aims to this research are:

i. Designing an automatic cat food machine.

ii.Developing automatic cat food machines using Arduino system.

iii.Test and analyse the effectiveness of automatic cat food machines in terms of functionality and efficiency.

Need of Project

It is common to know that pet care is a burden to the pet owner. Any pet needs to be taken care and the owner need to be there to take care of them. Some pet cannot control their diet and will eat if there's food for them. Other pet will just eat a certain type of food. In other word, the owner cannot leave the pet on its own. The problem occurs when the owner must leave their pet for certain time and there is no one there to watch them. Therefore, to solve the problem, system that can automatically feed the pet without the presence of the owner is needed to make sure that the pet stays healthy.

LITERATURE SURVEY

This chapter is provided description of literature review done regards to the project title of design and fabrication for cat feeder. The literature review started with the other product of cat feeder that is widely used. There are four products that are common in the production of cat feeder. With the explanation of each product, the advantages and disadvantages can be seen in those products and can help to make upgrade for another better product. There are many diverse types of pet feeders on the market today attempting to solve the problem of making sure that each pet has access to a healthy amount of food throughout the day, regardless of the owner's schedule. These feeders' range in price from under (RM 20 to RM 300 and above) and offer varying degrees of control to the pet owner. The most basic pet feeder is a gravity feeder, which consists of a hopper full of food which falls into a bowl as the bowl is emptied by the pet (see Figure 1). This type of feeder is not meant to control portion sizes or access to the food. The feeder in Figure 2.1 allows the pet owner to ensure that the pet has access to food throughout the day or for a longer period and that the food does not go stale from exposure to the air before the pet eats it but does nothing to control the amount of food eaten by the pet or to keep one pet from eating another's food. This feeder is designed to be a hassle-free form of free feeding. The user reviews for this type of feeder are positive with the most common complaint being that the food hopper can be knocked off by the pet, creating a mess.

DESIGN APPROACH

Block Diagram
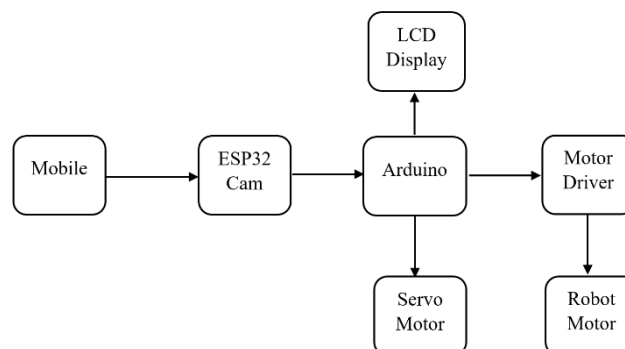
Circuit Diagram
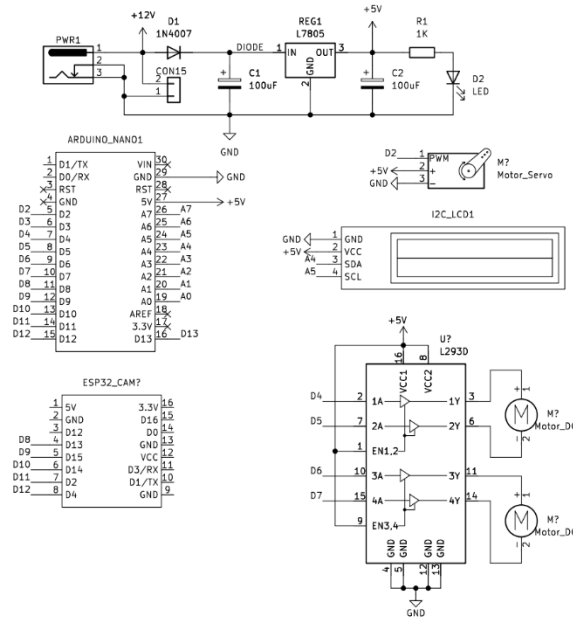
Hardware Design

ATMEGA328P: ATMEGA328 is high performance, low power controller from Microchip. ATMEGA328P is 8 bit microcontroller based on AVRRISC architecture .It is the most popular of all AVR controller used in ARDUINO boards.

LCD Display: An LCD (Liquid Crystal Display) screen is an electronic display module and has a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. The 16 x 2 intelligent alphanumeric dot matrix displays is capable of displaying 224 different characters and symbols. This LCD has two registers, namely, Command and Data.

IR sensor: IR Infrared Obstacle Avoidance Sensor Module has a pair of infrared transmitting and receiving tubes. When the transmitted light waves are reflected back, the reflected IR waves will be received by the receiver tube. The onboard comparator circuitry does the processing and the green indicator LED comes to life. The module features a 3 wire interface with Vcc, GND and an OUTPUT pin on its tail. It works fine with 3v3 to 5V levels. Upon hindrance / reflectance, the output pin gives out a digital signal (a low-level signal). The onboard preset helps to fine tune the range of operation, effective distance range is 2cm to 80cm.

RTC Module: Real time clocks (RTC), as the name recommends are clock modules. The DS1307 real time clock (RTC) IC is an 8 pin device using an I2C interface. The DS1307 is a low-power clock/calendar with 56 bytes of battery backup SRAM. The clock/calendar provides seconds, minutes, hours, day, date, month and year qualified data.

Servomotor: A servo motor is a rotary actuator or a motor that allows for a precise control in terms of the angular position, acceleration, and velocity. Basically it has certain capabilities that a regular motor does not have. Consequently it makes use of a regular motor and pairs it with a sensor for position feedback.

IC L293D: The L293D motor driver is available for providing User with ease and user friendly interfacing for embedded application. L293D motor driver is mounted on a good quality, single sided PCB. The pins of L293D motor driver IC are connected to connectors for easy access to the driver IC's pin functions.

Gear Motor: Almost every mechanical movement that we see around us is accomplished by an electric motor. Electric machines are a means of converting energy. Motors take electrical energy and produce mechanical energy. Electric motors are used to power hundreds of devices we use in everyday life. Motors come in various sizes. Huge motors that can take loads of 1000's of Horsepower are typically used in the industry. Some examples of large motor applications include elevators, electric trains, hoists, and heavy metal rolling mills. Examples of small motor applications include motors used in automobiles, robots, hand power tools and food blenders. Micro-machines are electric machines with parts the size of red blood cells, and find many applications in medicine.

CONCLUSION

The smart medicine dispenser can be used to improve medicine adherence. It prevents overdosing, misdoing, and. However, it cannot prevent voluntary no adherence, such as pretending to take medicine or spitting it out afterwards. For future work, we plan to develop additional functions that detect a patient's motions using a camera sensor to verify actual compliance. We also plan to extend our method to apply the smart medicine dispenser to other personal health devices such as activity monitors.

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