

# Automatic Pet Feeder

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**Abstract:** The project is about a machine that automatically feeds pets daily for a minimum of eight hours while all members of the nuclear family are busy at work to live in big cities and other cities. This set is automatically controlled by an arduino.

Pets can get food after half an hour and the same can be monitored by looking at eating habits if the pet is. and the pet owner always ensures the feed of the pet especially dogs and cats when they are busy at work. Pet food is kept inside the box as they leave the house. Food will be given to pets automatically up to a certain amount only when the pet comes close to the box when it feels hungry. It is a very good idea to protect pets from starvation whenever there is no one at home and they are all busy with their planned work and office or business.

The owner can leave pets at home in the event of any emergency as well. The cost of caring for a pet has been reduced due to the introduction of such equipment on the market.

**Keywords:** pets, feeder, arduino, motors, sensor.

## I. INTRODUCTION

Today many people are interested in having pets in our home. But these pets must be properly cared for. Feeding them on time is an important task as they are part of the family. But in a busy system people fail to pay attention to our pet and thus fail to get proper nutrition on time.

Yet Everyone is not an expert at pets. Thus introduced the concept of "Automatic Pet Feeder". Automatic Pet Feeder is an automatic feeder that can adapt to all kinds of pets that can be found such as dogs, cats, monkeys, rabbits etc. In emergencies people need to get out for a while, but deal with problems with pets. This time the machine helps. The machine can set the timer and in the meantime a gap in the machine is running. The Owner will also be able to monitor the health status of pets by seeing their diet.

This project addresses the above problem by introducing an automated Pet Feeding Program to ensure that pets are fed periodically. Automatic pet Another advantage is that it helps you to stick to the routine, as animals get used to the routine. A pet feed can be filled in many ways one can set the time and date using the Arduino Uno displayed on the LCD screen installed in the pet feed.

This set is controlled by Arduino. Pets can get food after half an hour and the same can be monitored by looking at eating habits if the pet is. The pet owner always ensures that the pet is fed especially to dogs and cats when they are busy at work. Pet food is kept inside the box as they leave the house. Food will be given to pets automatically up to a certain amount only when the pet comes close to the box when it feels hungry. It is a good idea to protect pets from starvation whenever there is no one at home and they are all busy with their planned work and office or business.

The owner can leave pets at home in the event of any emergency as well. The cost of caring for a pet has been reduced due to the introduction of such equipment on the market. Such a view is gaining popularity throughout the world today.

## II. EXISTING AND PROPOSED SYSTEM

The supply limits for pets include a variety of noise deficits, requiring timely feed and water refilling of not more than two types of dispensing and a limit on the amount to be seized. The limitations on the digital system will be that they need to reset the clock cycle to calculate the time it takes to deliver food.

Proposed System Different sensors are used for automatic animal feeds for optimal performance. The distance sensor will be used as the main part of the machine. The distance sensor or proximity sensor will be connected to the arduino and as the pet is heard near the animal feed point, the food from the bottle will be poured in. indishi. Whenever a distance sensor senses movement at a distance from a pet feed that is as the pet approaches the vessel, food is supplied. The servo

engine will be used for the lock system. Lock system refers to the angle at which a feed should be stored with a servo motor as a lid. All these components will determine the proper working animal feed server.

Arduino UNO is an open source microcontroller based on the microchip ATmega328P microcontroller and developed by Arduino.cc. Arduino is an open source hardware and software company, project and user community that designs and manufactures single-board and microcontrollers, digital devices. Its hardware products are licensed under the CC-BY-SA license while the software is licensed under the GNU Lesser General Public License (LGPL) or GNU General Public License (GPL) which allows the creation of Arduino boards and software for Automatic Pet Feeder distribution with anyone. Arduino boards are commercially available on the official website or by authorized distributors. The Motor SG90 has a wide servo angle (0-180 degrees). Our lock system will be similar to an angle-controlled lock (we will control how much food is released when the "lock" is on / off). A servomotor is a rotating actuator or line actuator that allows for precise control of angular or line position, speed and acceleration. [1] Contains an appropriate sensor engine to detect local response. It also requires a sophisticated controller, usually a dedicated module designed for use with servomotors. Servo Motors is not a specific car segment, although the term servomotor is often used to refer to an engine suitable for use in a closed loop control system.

Ultrasonic from module HC - SR04 provides 2cm - 400cm contact measurement function, various accuracy can reach 3mm. Modules include ultrasonic transmitters, receiver and control circuit. An ultrasonic sensor is a device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the displayed sound into an electrical signal. Ultrasonic waves travel faster than the speed of sound (i.e. sound that people can hear).

An IR sensor proximity sensor usually emits a field of electromagnetic field or beams (for example, infrared), and detects changes in field or signal recovery. The sensor is often called the proximity target sensor. Different target proximity sensors require different sensors. For example, a capacitive proximity sensor or a photoelectric sensor may be suitable for plastic purposes; an inductive proximity sensor always needs a metal target. Nearby sensors can have high reliability and long working life due to the lack of mechanical components and the lack of physical contact between the sensor and the sensor.

### III. IMPLEMENTATION

Automatic Pet Feeder is an automatic feeder that can adapt to all kinds of pets that can be found such as dogs, cats, monkeys, rabbits etc. In emergencies people need to get out for a while, but deal with problems with pets. This time the machine helps. The machine can set the timer and in the meantime a gap in the machine is running. The Owner will also be able to monitor the health status of pets by seeing their diet. This project addresses the above problem by introducing an automated Pet Feeding Program to ensure that pets are fed periodically. Automatic pet Another advantage is that it helps you to stick to the routine, as animals get used to the routine. A pet feed can be filled in many ways one can set the time and date using the Arduino Uno displayed on the LCD screen installed in the pet feed.

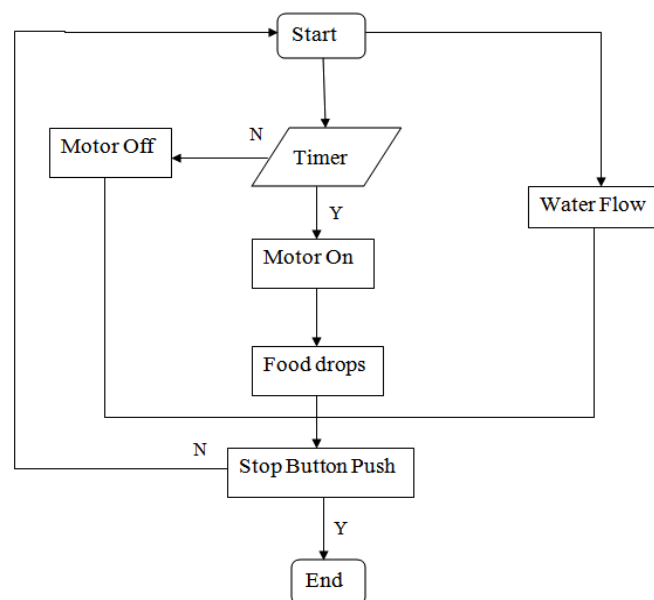


Figure1 Data Flow diagram for Automatic Pet Feeder

The Terms of Service are as follows: -

Devices should be able to detect food, and if food has other functions it should work.

IR Sensor: -The infrared sensor (IR sensor) is an optoelectronic sensor that has spectral sensitivity in the range of infrared wavelength 780 nm... 50  $\mu$ m. It should be able to see when a pet arrives at the feeder. For this use an ultrasonic sensor.

Ultrasonic Sensor: - Ultrasonic sensor is a tool that measures distance to an object using ultrasonic sound waves. The ultrasonic sensor uses a transducer to transmit and receive ultrasonic pulses that relay information about the proximity of an object. This is used to verify that a pet is in front of the machine or not. So as not to waste food.

Arduino Uno: -It is a microcontroller board based on ATmega328P. It has 14 digital input / output pins, 6 analog input, 16 MHz ceramic resonator, USB connection, power jug, ICSP header and reset button. This is used to control all sensors and servo motors. In Arduino the system is discarded. The time and times of the meal to be served each day are set.

Non Functional Requirements are as follows

The device must be able to feed the pet, and it must be able to feed the animal.

Food should be in dry form, so that there is no burden to clean the dispenser and other utensils.

The battery is the main note to be maintained, it must be fully compatible with the system so that hardware components do not burn out due to high current.



Figure 2 System design of Pet feeding machine

1. The project is based on both hardware and software systems. Initially the hardware components are assembled as a feeder, plank, servo motor, IR sensor, ultrasonic sensor, connecting cords and Arduino.
2. The system for determining the meal time to be consumed and the amount of food to be consumed and the control of sensors and servo motor is discarded in Arduino, electronically.
3. Once completed, the connection is made as if the IR sensor is connected to the Food controller to test the food. An ultrasonic sensor is then connected to detect the presence of a pet. Then the servo motor is connected.
4. Finally these parts are connected to Arduino in a furnished way for it to work properly.

**IV. CONCLUSION**

The project has incorporated a number of components and ideas into achieving the same goal which is to design an automated pet feed using Arduino uno. Key components of the project include a distance sensor to detect or identify the presence of a pet i.e. the animal is near the vessel or not and a servo motor that will be programmed to provide food as soon as the animal approaches. It frees the owner from having to feed his pet several times a day. The proposed project detects the presence of a pet using a distance sensor and operates appropriately. The owner does not have to worry about making plans or feeding his pet because of this default server. This default pet server serves as a helpful hand as it works best when the owner is not present. The Automatic Pet Feeding System was designed to ensure that every time a pet was given to its owner so that the master could perform other duties without having to worry about feeding. The Automatic Pet Feeding System has an attractive design and aesthetic model. Arduino and IoT add Automation to the system. The report indicated the basic design of the system to be implemented. And also the Arduino region to control system functions. Actual performance is expected in the next semester of studies. The success of the Automatic Animal Feed Program can be of great help to pet lovers in India.

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