A Project

on

AUTOMATIC PET FEEDER

Submitted by

Vytla Venkata Sai Sandeep :	12009993	17
Kammili Snehitha :	12014526	24
Chaitanya Vardhan Dontamsetti:	12015902	27

LOVELY PROFESSIONAL UNIVERSITY
PUNJAB

Oct-Nov., 2022

INDEX

S.NO	CONTENTS
1.	ABSTRACT
2.	INTRODUCTION
3.	COMPONENTS USED
4.	LITERATURE SURVEY
5.	DESIGN AND ARCHITECTURE
6.	RESULTS AND OUTCOME
7.	ARDUINO CODE
8.	CONCLUSION
9.	NOVALITY OF THE PROJECT
10.	REFERENCES

- **ABSTRACT:**

Does your pet wake you up in the morning eager to eat breakfast? Do you feel guilty when you can't make it home in time to feed your furry friend? Is your pet underweight? Does your pet eat too fast? All at a price of under 1500 INR. If you answered "yes" to any of those questions, consider switching to an automatic pet feeder.

- **INTRODUCTION:**

  - **No More Guilt**

  - All of us lead busy lives, and our schedules occasionally prevent us from maintaining a regular feeding schedule for our animals. It's not always possible to ensure that our pets will eat at the same time every day. The assurance that your pet will be fed while you are gone or at work comes from feeders. When you are confident that your pet will eat the same meals every day, you can easily fit a late meeting into your calendar.

  - Can't find a cat sitter for your last-minute weekend getaway yet want to go? Place the feeder in place, clean the litter box, and leave! Your cat will receive all of her meals in the proper amounts on schedule. You won't have to omit a significant amount.

  - **No More Early Morning Wake-Up Calls**

Pets frequently identify you with food, which may cause them to wake you up or greet you when you go home. Pet feeders automatically feed your pet each meal while you are away. This is significant if you need to take some time to unwind

or sleep. Your pet will get into the habit of approaching the feeder for food rather than you.

Easy Weight Management

Approximately 55% of cats and dogs are underweight, which poses serious health risks like reduction in immunological function.

• A greater propensity to contract infections.

• Issues with the skin and coat, such as baldness.

• Imbalances in the hormonal system.

• infertility.

• Slower healing of wounds.

• A decreased lifespan.

• A decrease in bone density.

• Kidney illness

By giving your pet the portioned feedings they require, automatic feeders aid in correct weight maintenance.

A feeder might help your pet slow down if he eats too quickly or gulps down his food. The new Simply Feed pet feeder's Slow Feed option distributes each meal over a 15-minute period. This is excellent for cats as well because they like to eat more slowly. reducing speed

- **LITERATURE SURVEY:**
  - **make it smart:**

    The term "smart devices" refers to machinery that operates autonomously.

- Our investigation led us to the conclusion that the NodeMCU esp8266 can make it practicable.

- And for the reasons listed below, we used NodeMCU.

- A cheap open-source IoT platform is NodeMCU. It originally came with hardware based on the ESP-12 module and firmware that runs on Espressif

Systems' ESP8266 Wi-Fi SoC. Support for the 32-bit ESP32 MCU was later added.

NodeMCU has the benefits of being inexpensive, having built-in WiFi network support, having a smaller board, and using less energy.

- Get automatic control: We employed an ultrasonic sensor to automate the feeder's operation for the following reasons.
- The ultrasonic sensor can quickly find exterior or deep objects because of its high frequency, sensitivity, and penetrating strength.
  These sensors are simple to integrate with any form of controller, including microcontrollers.
- Compared to previous techniques, these sensors are more accurate at determining the thickness and depth of parallel surfaces.
- These sensors are capable of quickly detecting the type, shape, and direction of any particular items that are within their range.

Their sensors are simple to use and pose no danger to nearby people while

they are active.

- **Control the amount of food:**

  To control the amount of food we used a servo motor by making a slit to the container and opening and closing the slit with the help of a servo motor we chose the servo motor over another motor for the following reasons

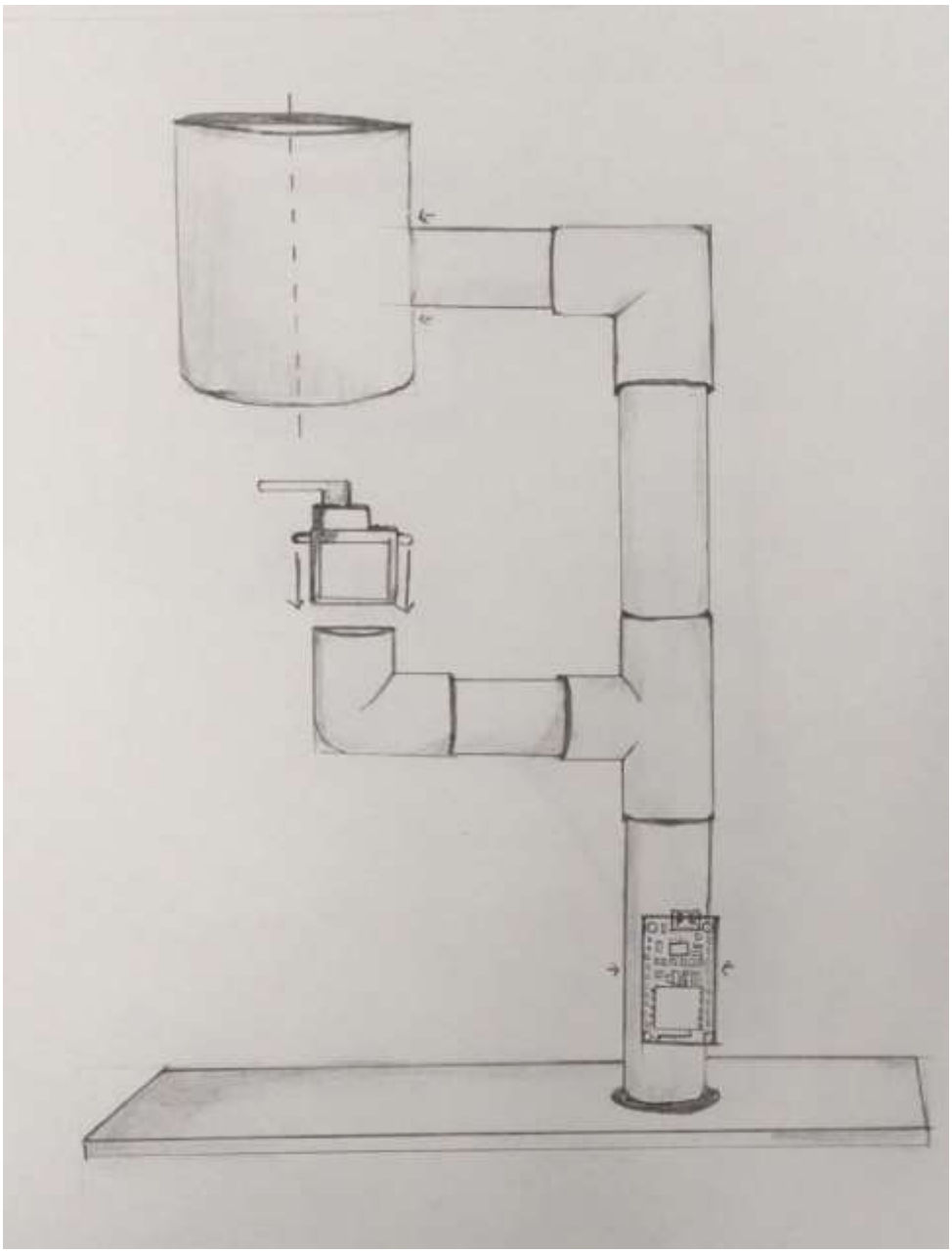
- **RESEARCH GAP:**

  There are multiple sources on the internet that deal with either automatic or wifi controlled here, we found a gap and made it to work with both.

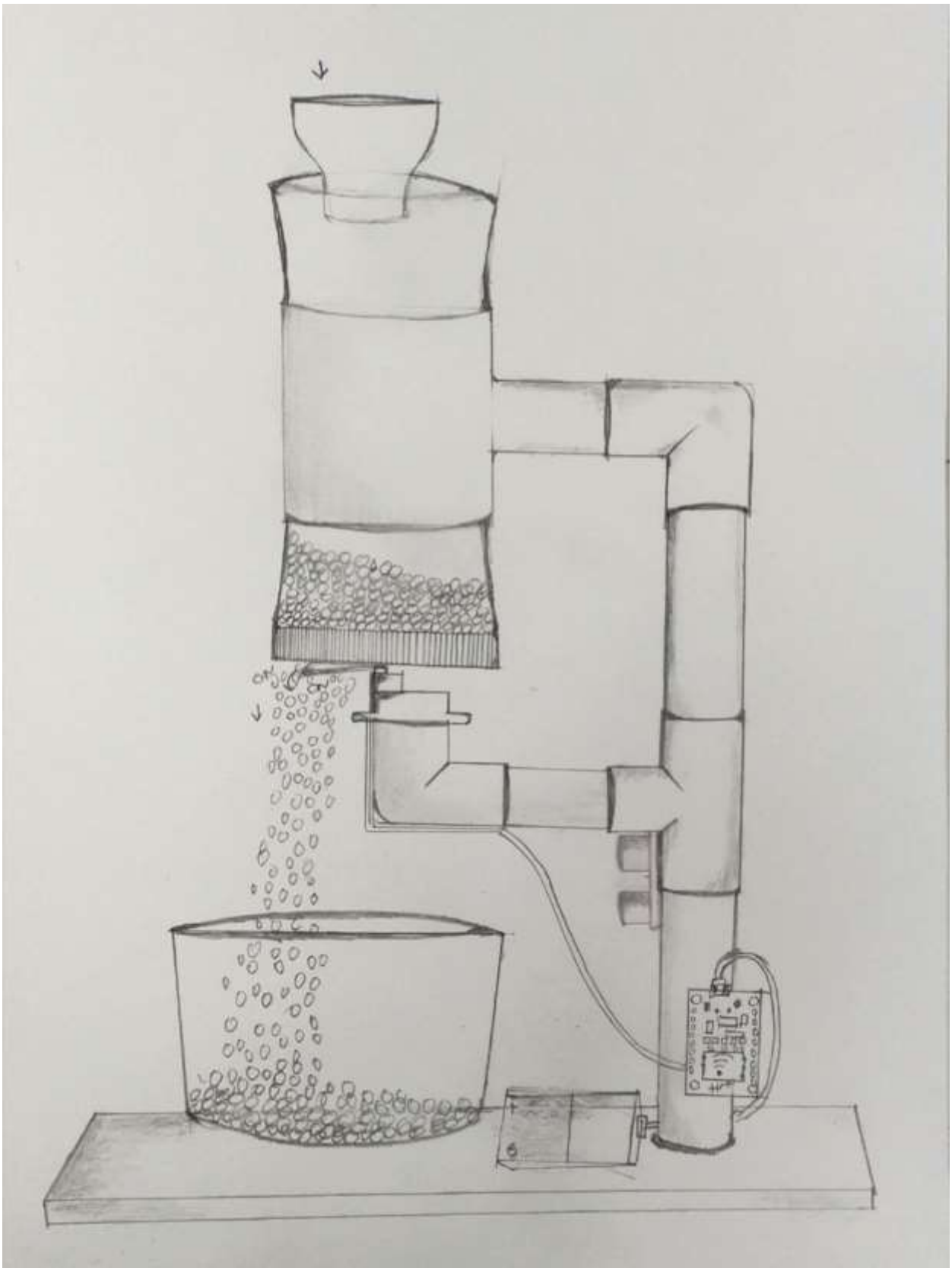
- **METHODOLOGY FOLLOWED:**

- Designing the feeder is one of the major tasks.
  firstly, we have to arrange the body parts and cut them precisely to the required way
- The cut pvc pipes should be attached to the plywood to make a rigid structure.
- As we are using transparent /translucent food containers, it makes the food level visible.
- We make a slit in the container, and opening and closing the slit is controlled with the help of a servo motor
- The servo motor can be automatically controlled with the help of an ultrasonic sensor
- With the help of Blynk software, we can control the opening and closing mechanism in three levels.

DESIGN AND ARCHITECTURE: -



1.body of the feeder



ARDUINO IDE CODE:

```
#define BLYNK_TEMPLATE_ID           "TMPLq9kWzV3o"
#define BLYNK_DEVICE_NAME           "try"
#define BLYNK_AUTH_TOKEN
"D5UZA0wV7JmK4nhoLvzQTT4pkKaGJdHk"
// for ultrasonic and servo
#include<Servo.h>
#define trigPin D4
#define echoPin D5
#define trigPin1 D6
#define echoPin1 D7
long duration;
int distance;
long duration1;
int distance1;
// Comment this out to disable prints and save space
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <Servo.h>
char auth[] = BLYNK_AUTH_TOKEN;
// Your WiFi credentials.
// Set password to "" for open networks.
char ssid[] = "realme 7";
char pass[] = "87654321";

Servo servo;
```

```
BLYNK_WRITE(V1)
{
  servo.write(param.asInt());
}

void setup()
{
  // Debug console
  Serial.begin(115200);

  Blynk.begin(auth, ssid, pass);
  // You can also specify server:
  //Blynk.begin(auth, ssid, pass, "
blynk
.cloud", 80);
  //Blynk.begin(auth, ssid, pass, IPAddress(192,168,1,100), 8080);
  pinMode(trigPin,OUTPUT);
  pinMode(echoPin,INPUT);
  pinMode(trigPin1,OUTPUT);
  pinMode(echoPin1,INPUT);
  Serial.begin(9600);
  servo.attach(15);//d8 pin
}

void loop()
{
  Blynk.run();
  digitalWrite(trigPin,LOW);
```

```
  delayMicroseconds(2);

  digitalWrite(trigPin,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin,LOW);
    duration = pulseIn(echoPin,HIGH);

  digitalWrite(trigPin1,LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin1,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin1,LOW);
  duration1 = pulseIn(echoPin1,HIGH);
  distance = duration*0.034/2;
  Serial.print("Distance:");
  Serial.println(distance);
  delay(10);
  distance1 = duration1*0.034/2;
  Serial.print("Distance1:");
  Serial.println(distance1);
    delay(10);
  if (distance<=20&&distance1>3)
{
 servo.write(150);
}
if (distance1<=3)
{
    servo.write(0);
 delay(10000);
```

}

}

- **RESULTS AND OUTCOME:**

  We are making this with three main objectives in mind

- Made feeder work automatically.
- Made To make it work with the help of in build WIFI module in such a way that it drops the food by opening the slit with the help of Blynk app.
- The closing of slit is done by the help of ultrasonic sensor as the boule is filled to certain level.
- Here we gave a delay of 10sec but this delay can be extended to 2-3 hours as We know that many pets are greedy and they may eat more.

CONCLUSION:

Our team's ultimate goal is to give pet owners an enjoyable and secure way for their pet to obtain food in a healthy way without having to measure it out or worry about overfeeding. When the owner wants to feed several pets, the automated pet feeder is fantastic. They are no longer concerned about one pet stealing food from the other. Are you worried that you might forget to feed your pet? The pet owner only needs to click on the mobile application with the straightforward and user-friendly software to let their pet eat from a distance. We know how frustrating these particular challenges can be as pet parents, but thanks to the Automated Pet Feeder, these problems are now resolved. This project has involved

NOVELTY:

There is no source in the internet that uses that deals with the following features and also and loop holes

- **WIFI CONTROLLABLE:-** The amount of food dropped in the bowl is controlled with the help of an inbuilt wifi module through Blynk software
  - **WHAT IF THE SMARTPHONE IS NOT AVAILABLE OR IT IS NOT IN THE RANGE OF WIFI?**
- **SENSOR DETECTABLE:-**The movement of the slit is also controllable with the help of an ultrasonic sensor.
  - **WHAT IF THE ULTRASONIC SENSOR WORKS JUST AFTER THE RESPONSE OF THE WIFI MODULE**
- We give a delay of 5 min such that the ultrasonic sensor stops working for the given time.

REFERENCE:

https://www.petsafe.net/learn/pet-feeder

https://www.youtube.com/watch?v=imtcdl9

https://www.ece.ucf.edu/