



Project Guide

Remote Pet Feeder

by Daiwa-Ken Team A

Have you ever wondered if you fed your pets after you already left your home? What if you could feed your pets from anywhere? Build this DIY pet feeder and with just an email, a press of a button,, or based on a set schedule, you can activate a motor to release food into your pet's bowl.

What you'll learn:

How to use basic electronics
How to use sensors as triggers
Design and user interaction concepts

Instructions:

1. Setup GPIO and motor
2. Modify plastic bottle to create pet food holder
3. Program pet feeder in the MESH app



Materials

- MESH GPIO (x1)
- MESH Button (x1)
- Motor Driver (x1)
- DC ("Gear") Motor (x1)
- Alligator Clip (x1)
- Straws (x2)
- Cardboard
- Plastic Bottle
- Wire or strong string



MESH™
Make, Experience, SHare

To see more details and videos for this project visit [MESHprj](#) on Instructables.
For technical support or questions, visit [meshprj.com](#)

Step 1 Prepare DC Motor

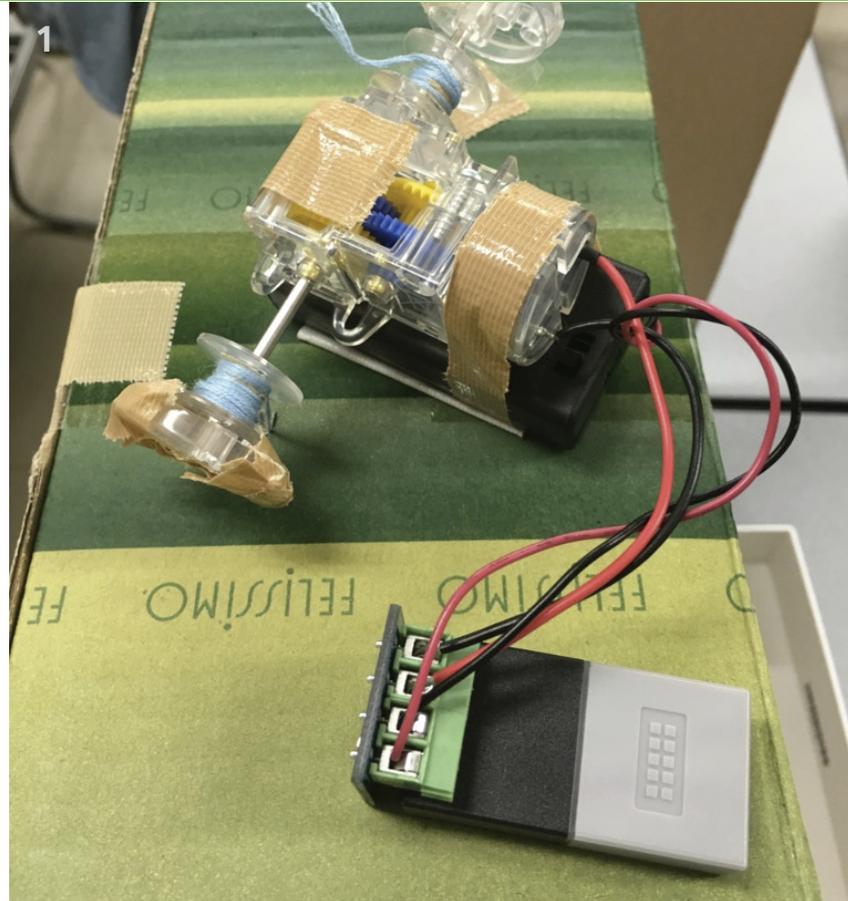
We will use the DC motor to open and close the lid of the plastic bottle by rolling up string connected to the lid.

- Connect motor driver to the GPIO tag.
- Clip each end terminal of gear motor.
- Connect other side of alligator clips with a GPIO tag.

Step 2 Modify Plastic Bottle

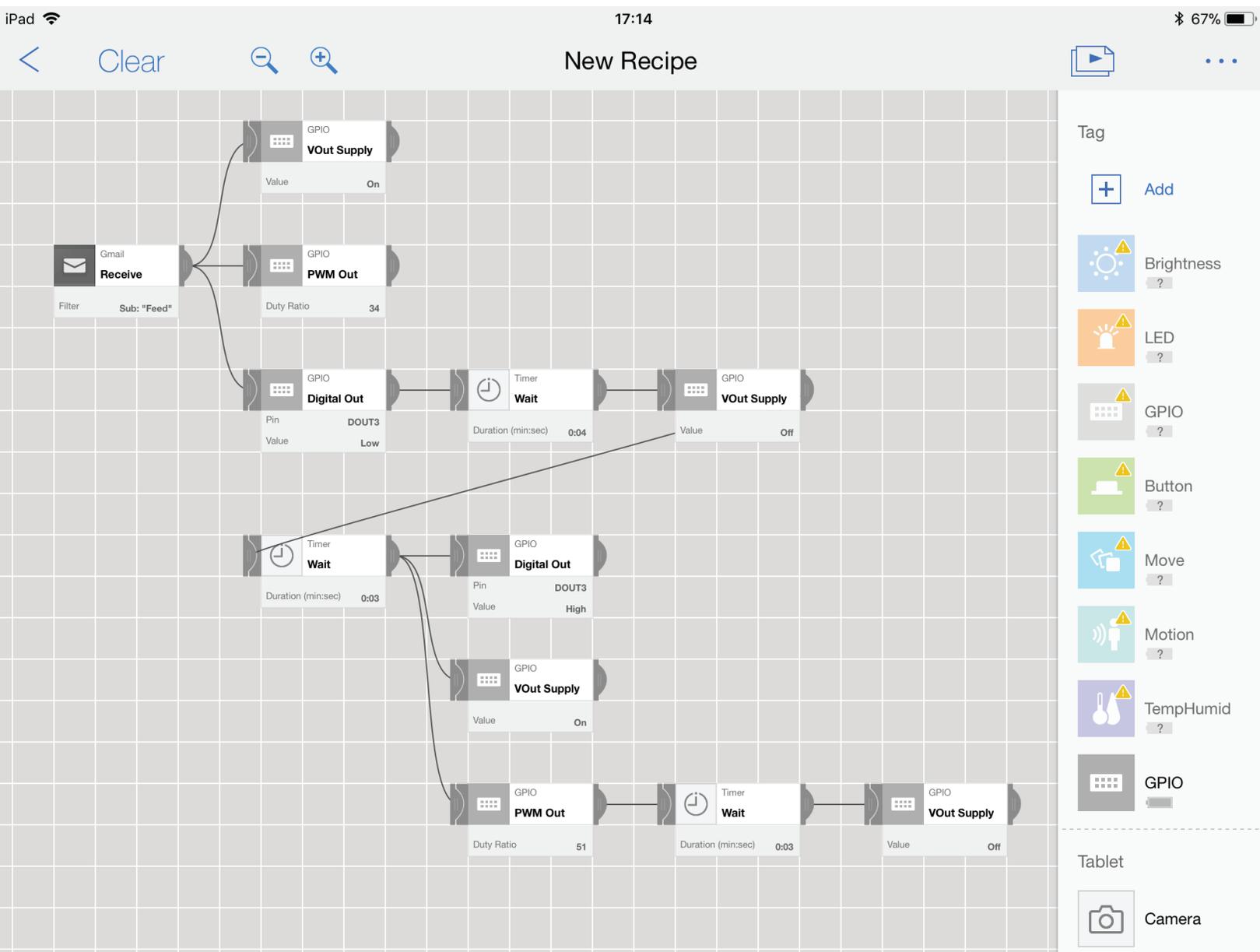
Design a lid for the plastic bottle that will open and close to let out the pet food. You may need to finetune the motor speed, open and close duration, and torque of the motor based on the weight of the food and the appropriate amount of you'd like to let out.

- Lid inspiration: attach a piece of cardboard to one side of the plastic bottle and to the string.



Step 2 Program the Pet Feeder the MESH App

In the MESH app this project uses MESH GPIO block, timer block, and Gmail block. See a screenshot of the project below and instructions on the next page.



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Setup Gmail to trigger the gear motor:

- Add a Gmail block onto the canvas.
- Set to "Receive" and enter a subject

Program a GPIO block to turn on the motor:

- Add a GPIO block onto the canvas.
- Set the value of the "VOut Supply" to "On"
- Connect the Gmail block to this GPIO block

Program a GPIO block to control the speed of the DC/gear motor:

- Add another GPIO block onto the canvas.
- Set the duty ratio of the "PWM Out" to "34"
- Connect the Gmail block to this GPIO block

Program a GPIO block to open the lid of the plastic bottle:

- Add another GPIO block
- Set the pin of the "Digital Out" to "DOUT3" and the value to "Low"
- Connect the original Gmail block to this block

Program a "Timer" block to set the duration of opening the lid:

- Add a "Timer" block onto the canvas
- Set the duration of the "Wait" to "4 seconds"
- Connect the previous GPIO block (Digital Out) to the "Timer"

Program a GPIO to turn DC/gear motor off:

- Add a GPIO block onto the canvas
- Set the value of the "VOut Supply" to "Off"
- Connect the previous "Timer" block to this GPIO tag

Program a "Timer" block to set the duration of the feeding session:

- Add another "Timer" block onto the canvas
- Set the duration of the "Wait" to "3 seconds"
- Connect previous GPIO block to this "Timer"

Program a GPIO to turn the gear motor off:

- Add another GPIO block onto the canvas
- Set the value of the "VOut Supply" to "On"
- Connect the previous "Timer" block

Program a GPIO to close the lid of the plastic bottle:

- Add another GPIO block onto the canvas
- Set the pin of the "Digital Out" to "DOUT3" and the value to "High"
- Connect the previous "Timer" block

Program a GPIO block to control the speed of the gear motor:

- Add another GPIO block onto the canvas
- Set the duty ratio of the "PWM Out" to "51"
- Connect the previous "Timer" block

Program a "Timer" to set the duration of closing the lid of the plastic bottle:

- Add another "Timer" block onto the canvas
- Set the duration of the "Wait" to "3 seconds"
- Connect to previous GPIO block (PWM)

Program a GPIO block to turn the DC/gear motor off.

- Add another GPIO block onto the canvas
- Set the value of the "VOut Supply" to "Off"
- Connect the previous "Timer" block

Test your project and enjoy!

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