



Project Guide

Self-Watering Plant Stand

MESH IoT blocks make thirsty plants a thing of the past with this super simple self-watering plant stand with optional, instant-add, voice activation using Amazon Echo. All you need is our MESH GPIO block and a mini water pump to get started building your own.

What you'll learn:

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

Instructions:

1. Build the plant stand
2. Program plant stand in the MESH app



Materials

- MESH GPIO (x1)
- MESH Button (x1)
- USB-Powered Water Pump (x1)
- Container with lid or tissue box (x1)
- Plastice or metal tube (x1)
- MESH GPIO Converter (x1)



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Make, Experience, SHare

Project Guide Self-Watering Plant Stand

Step 1 Build the Plant Stand

In our project, we used a (pretty sleek) tissue box, but feel free to use any container and lid with a hole in it.

Assemble a container and lid.

Prepare the lid of the container with one large hole and at least one additional hole for the water tube.

Add water to the container and close lid.

Pull the USB cord through the larger hole in the box.

Set up the USB water pump.

Connect the USB to the custom GPIO adapter. Then Connect MESH GPIO to the GPIO adapter.

Viola! Your very own self-watering plant stand.



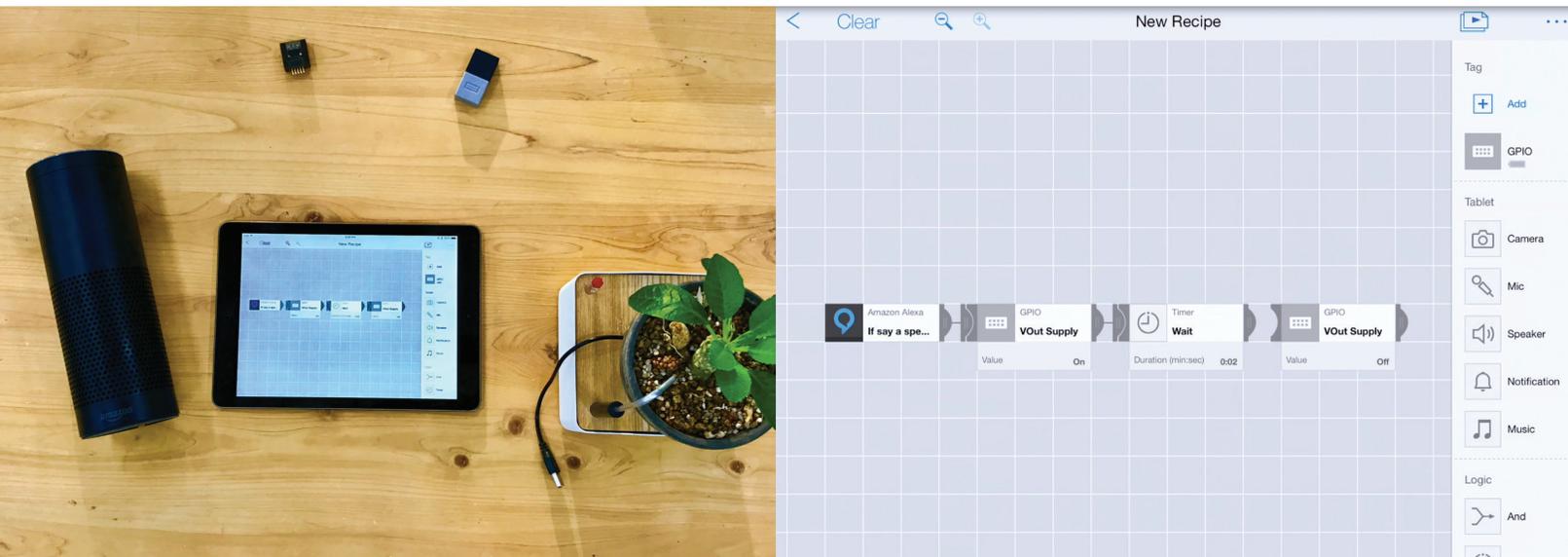
To see more details and videos for this project visit [MESHprj](#) on Instructables.

For technical support or questions, visit meshprj.com

Project Guide Self-Watering Plant Stand

Step 2 Program the Plant Stand in the MESH App

We've designed our recipe to make the plant stand voice activated using Amazon Alexa. You can also choose to automate the plant stand using other sort of controls like a schedule or wireless button.



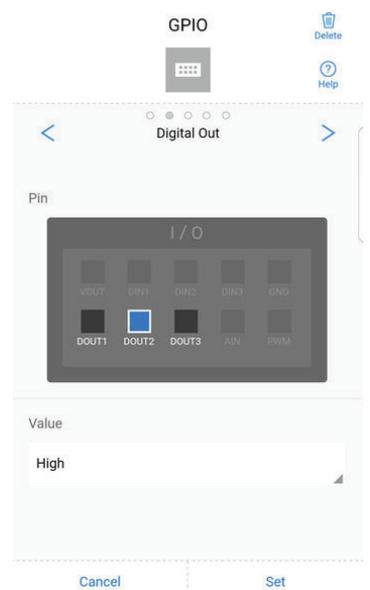
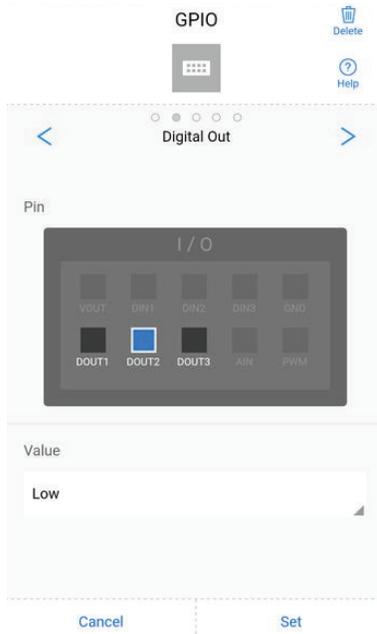
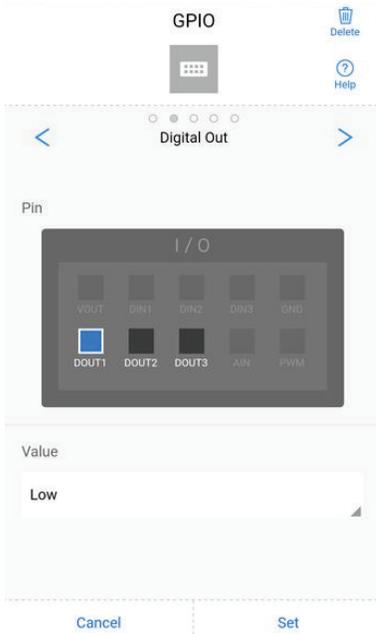
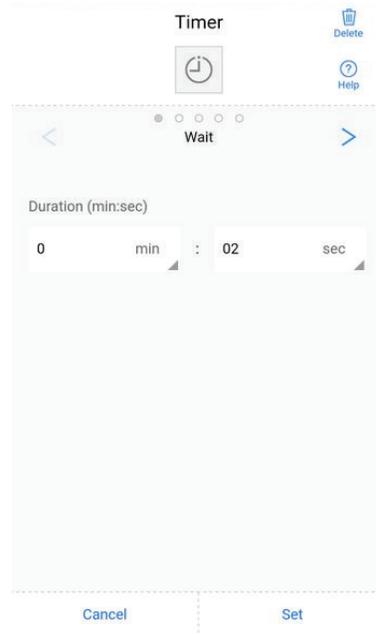
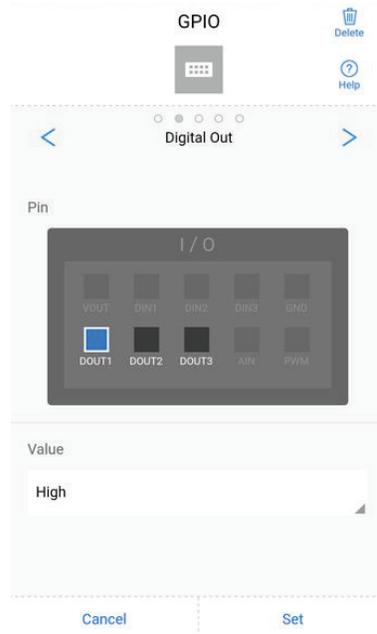
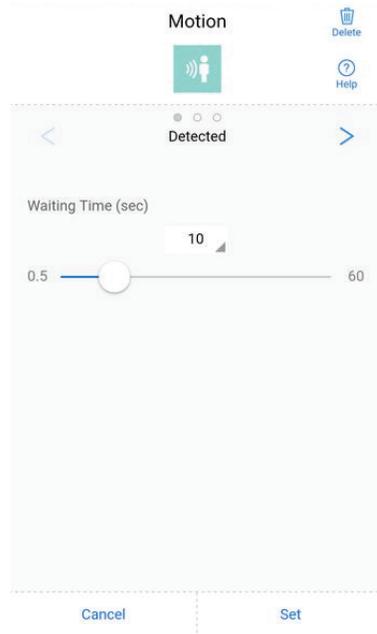
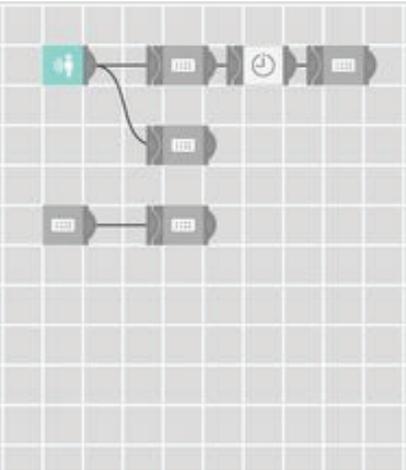
Step 2 Set up the LEDs

Grab the RGB LED cathodes and the breadboard. The pins on the RGB LED cathode are in the order of BLUE, GREEN, GROUND, and RED, with ground being the longest pin.

Project Guide Self-Watering Plant Stand

Step 4 Create Programming in the MESH App

Screenshots for the Interactive Candle programming in the MESH app.



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Step 4 Create Programming in the MESH App (continued)

Use the screenshots from the MESH app to create the programming for the interactive candle. (Follow the images from left to right.)

D-OUT1 determines whether or not to flicker the lights. In the interactive candle, the Motion sensor triggers the GPIO tag to set this value to HIGH to have the lights flicker, waits a few seconds, and then go back to LOW to bring the lights back to a stable condition.

D-OUT2 determines whether the lights should be on or off. If the output is HIGH, the light will turn off. As long as the output is on LOW, the lights will turn on.

The motion detector will also turn the lights on, so that you can feel really cool acting like a magician to turn the candle on, which will start with the flicker and then stabilize. After that, the motion sensor just sets it to flicker every time it detects movement, like a normal candle would if you passed your hand over it quickly.

Great, you've finished the project and learned about wiring, triggering, and basic code!

Feel free to test the candle, improve the design, or even share it with other makers on Instructables.com.