Is Granny Active Today?

Version 1.2 – 2018.11.19 – rgrokett

Place this detector in a room and anytime someone enters the room, a record is created. Then each morning, a small report of all activity is sent via email or SMS message.

```
Activity was seen 42 times today

ACTIVITY   DAY/MO   HOUR    COUNT
           04/09    09:00   4
           04/09    10:00   7
           04/09    11:00   5
           …
           04/09    23:00   0
           05/09    01:00   0
           …
           05/09    06:00   1
           05/09    07:00   3
```

By default, the report runs each morning at 8am for the previous 24 hour period. That way you can tell if granny got up in the morning, as well as watching unusual activity during the night before.

Edit the crontab file to change the run time.

The program can send messages via email or SMS (using IFTTT). You will need an IFTTT account.

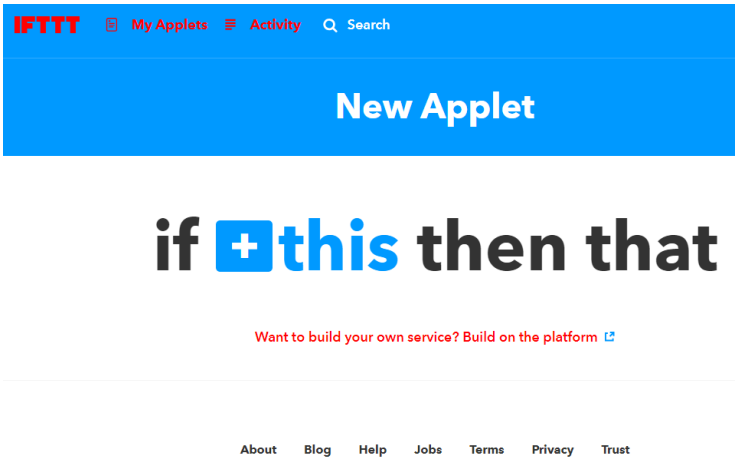
Parts List

- Raspberry Pi Zero W (or better)
- PIR Motion Detector such as https://www.adafruit.com/products/189
- 5v Power supply for Raspberry
- 4GB SD card (or better)
- Free IFTTT account www.ifttt.com

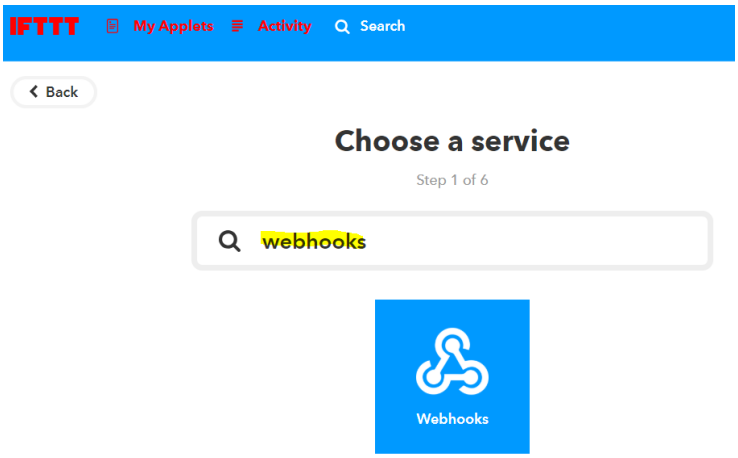
IFTTT SMS

To use the IFTTT SMS Service:

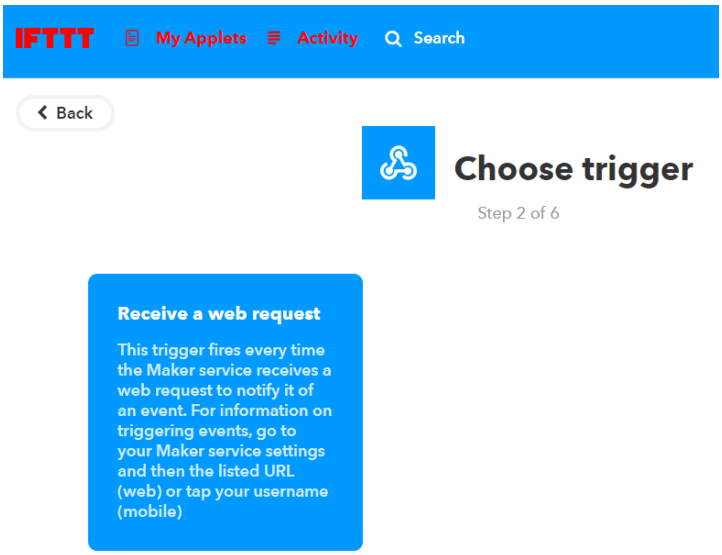
1. Go to IFTTT and sign up/sign in https://ifttt.com/
2. Go to Create a new applet https://ifttt.com/create



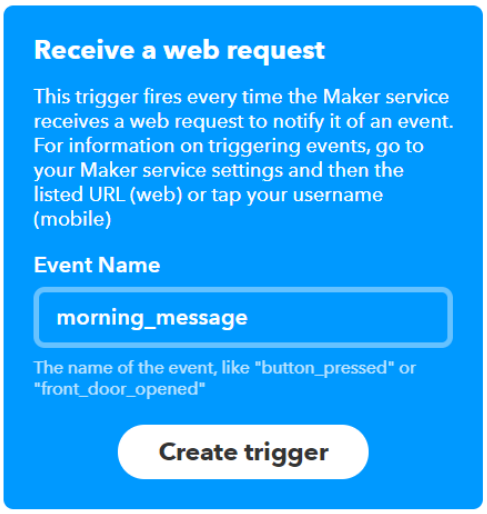
3. Click “+this”
4. Enter “webhooks” in search and click on the webhooks icon



5. Click on the “Receive a web request” blue text box

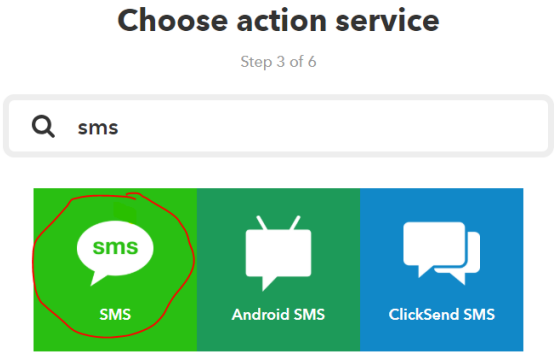


6. Enter the name “morning_message” exactly as is.
   Don’t change this unless you also edit the send_ifttt.py program
   `event = "morning_message"`

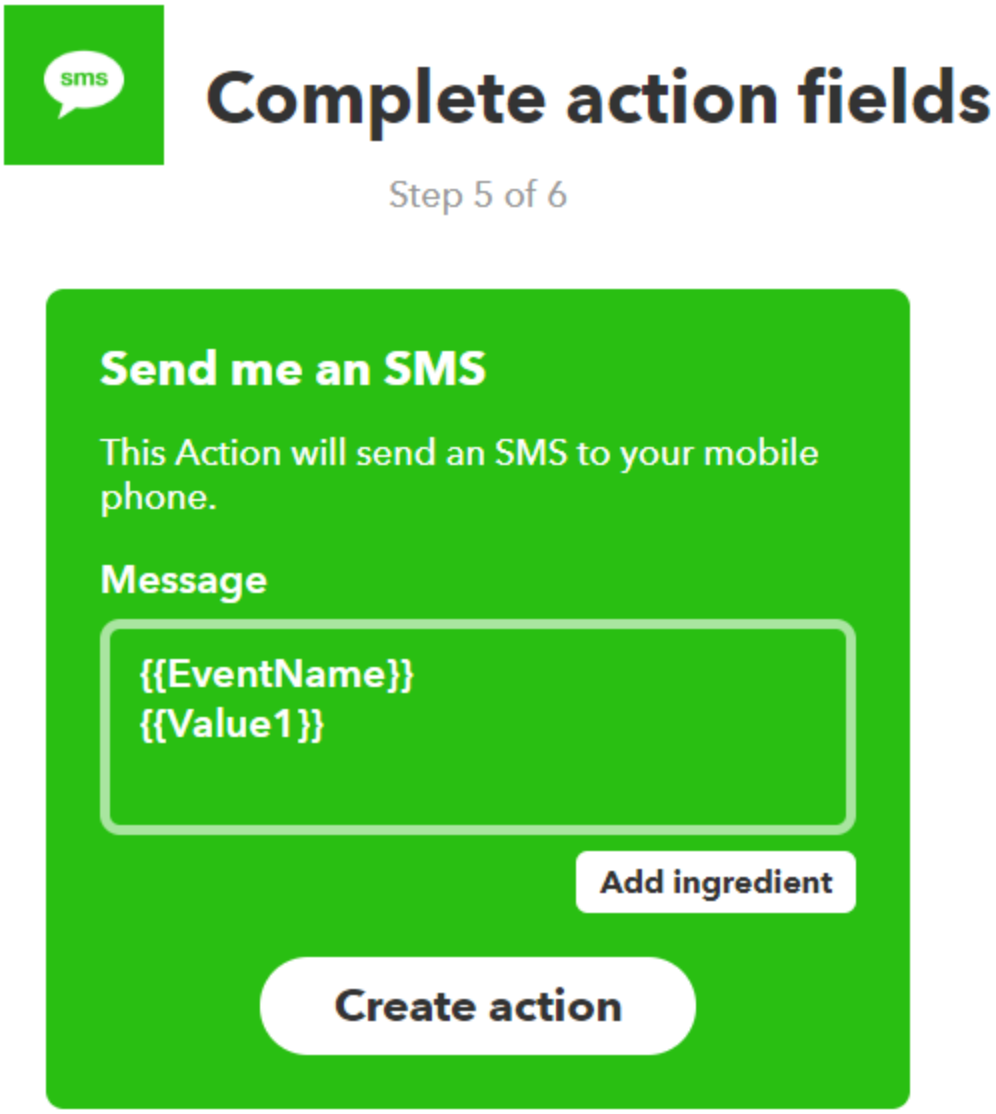


7. Next, click on “+that” and search for “sms”

8. Click on the green SMS icon



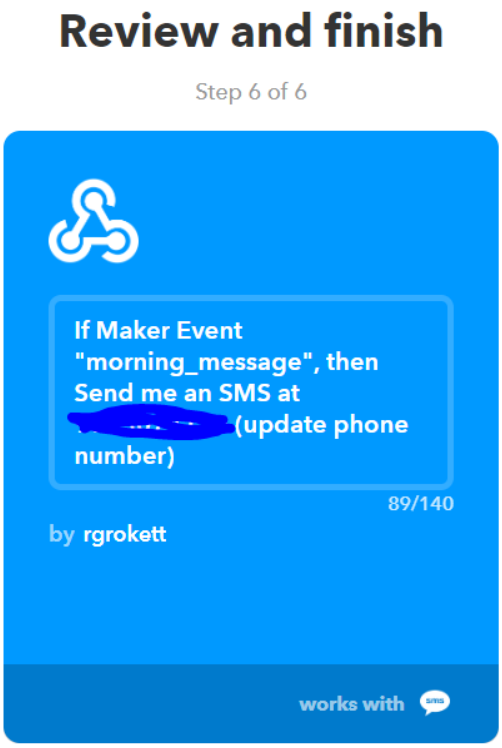
9. Click on the green “Send me an SMS” and edit the message as follows:



10. Be sure to enter the field name {{Value1}} as this will be used to populate the SMS message. Remove anything else as the length of IFTTT SMS messages is limited.
11. Click Create action.

NOTE: You can easily change this to use email or many other IFTTT Actions by choosing a different action, such as email, gmail, etc. Just be sure that EventName = "morning_message".

12. Verify the information (particularly be sure to verify your cellphone phone number and update as needed.)

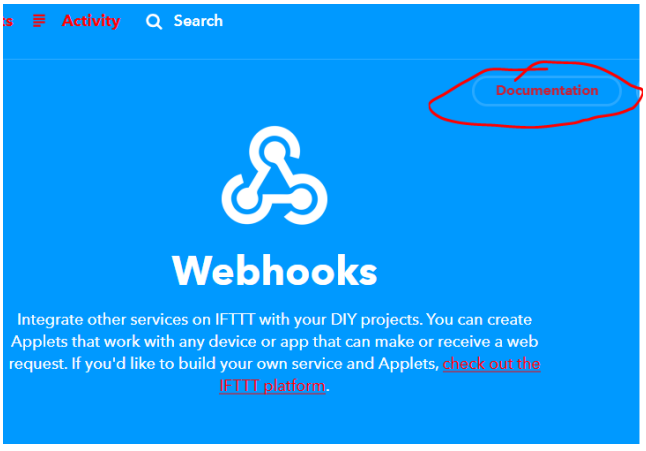


13. Click FINISH as the bottom of the screen.
    You can verify it runs by clicking “Check now”

14. This IFTTT script can be run from any remote program using a special URL.
    To find the IFTTT trigger URL, go to the following:

    https://ifttt.com/services/maker_webhooks

    and click on “**Documentation**”



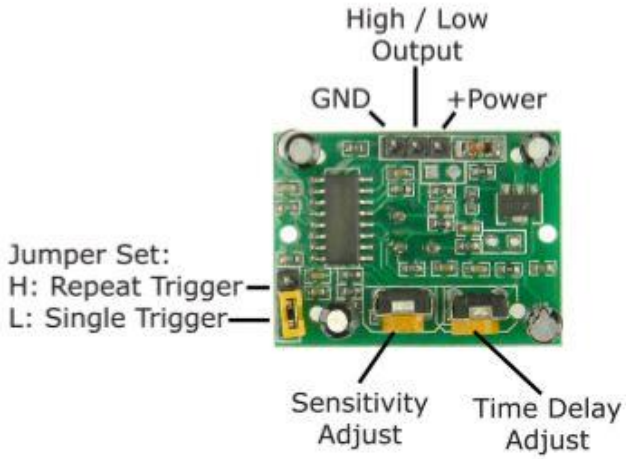
15. Copy the API Key string. You will need it below.

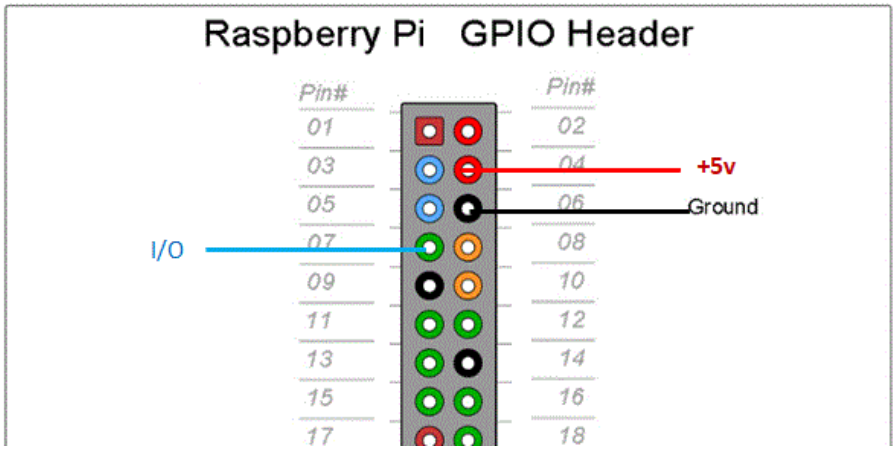
You should now be finished with IFTTT setup.

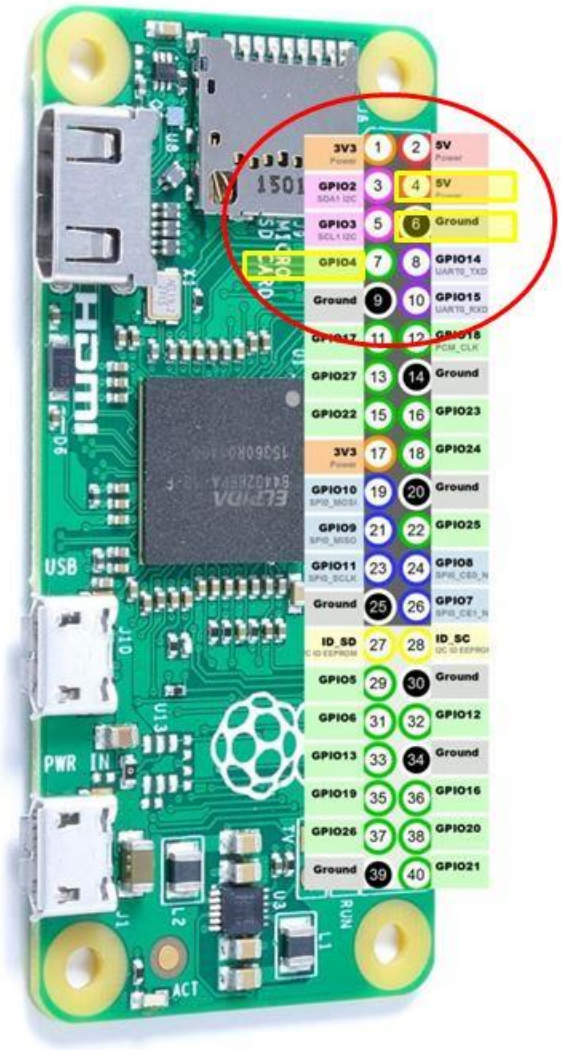
Wire PIR Sensor

Wire the PIR just requires 3 pins:

PIR	RASPI
+Power	+5v – Pin 4
Output	GPIO4 - Pin 7
GND	Gnd – Pin 6





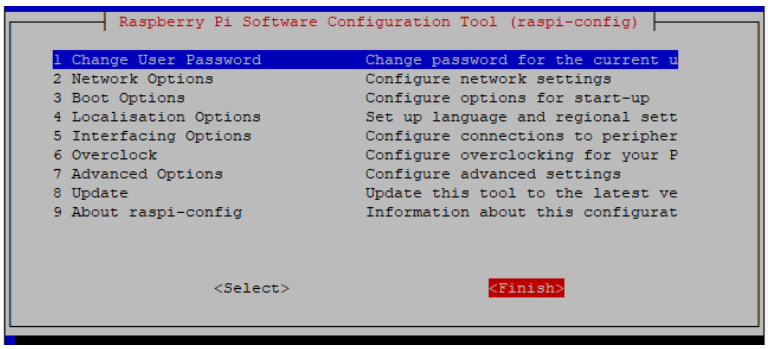


Install and Update Software

This project can run on a Raspberry Pi Zero W or larger. It does not need a monitor or keyboard if you log in via SSH. Everything is on the command-line.

- Install Raspbian Lite on an SD card. https://www.raspberrypi.org/downloads/raspbian/
- Set up WiFi and SSH access (See Appendix, below for hint!)
- Log into the Pi and run:

```
sudo apt update
sudo apt upgrade
sudo raspi-config
```



- Change the Pi User Password
- Change the TimeZone to your local (Localization Options -> Change TimeZone)

Once rebooted:

1. Log into your Pi
2. cd /home/pi

   ```
   $ sudo apt install git python-pip
   $ sudo pip install requests
   $ git clone https://github.com/rgrokett/is-granny-active.git
   ```

3. Install files into home directory:

   ```
   $ mv is-granny-active/pir/* /home/pi
   ```

4. Edit:

   ```
   $ nano send_ifttt.py
   ```

   Change `api_key  = "{YOUR_IFTTT_API_KEY}"`

5. If you use IFTT email, you can change the line “useSMS = 0” but not required.

6. Run to test IFTTT:

   ```
   $ sudo python -u send_ifttt.py
   ```

7. You should get an SMS (or email) message on your phone after a few moments.

8. If it works, install the startup scripts:

   a. `$ crontab cronfile`

   b. `$ sudo nano /etc/rc.local`

   Append following **before exit 0**

   ```
   /home/pi/run.sh  >/dev/null 2>&1
   ```

9. Reboot

Usage

- Install into a small box or case.
- Place the unit in a main room or kitchen.
- You won't see any activity from the device unless your PIR includes a detect led.
- At 8:00AM each morning, you should receive a SMS text or email message.

```
Activity was seen 42 times today

ACTIVITY   DAY/MO   HOUR    COUNT
           04/09    09:00   4
           04/09    10:00   7
           04/09    11:00   5
           …
           04/09    23:00   0
           05/09    01:00   0
           …
           05/09    06:00   1
           05/09    07:00   3
```

Appendix

Install **Raspbian Stretch Lite** onto a 4GB or larger SD card. (steps below)

1. If you haven't already, install Raspbian Lite version onto a 4GB or larger microSD card. You DO NOT need the GUI version, as this project does not use a monitor or keyboard.
   https://www.raspberrypi.org/downloads/raspbian/

2. You will need to access the Raspberry remotely via SSH. On Windows, you can use PUTTY SSH terminal program. On Mac, just bring up a command terminal window.
   https://www.putty.org/

Did you know?

If you install Raspbian on an SD card using a PC, you can create two files on the card to configure WiFi and SSH access before you boot it on a Raspberry?

For this, assume your SD card is currently mounted as K: on your PC:

1) Install the latest Raspbian Lite image to the SD.
   https://www.raspberrypi.org/downloads/raspbian/

2) With notepad, create a file called just "**ssh**" and use Save As "All files" to **K:\ssh**
   The file can contain anything. It's the **filename** that is important. Must **NOT** be "**ssh.txt**"!!!

3) With notepad, create a second file called "**wpa_supplicant.conf**" with following:

```
ctrl_interface=DIR=/var/run/wpa_supplicant
GROUP=netdev
update_config=1

network={
    ssid="mySSID"
    psk="mypassword"
    key_mgmt=WPA-PSK
}
```

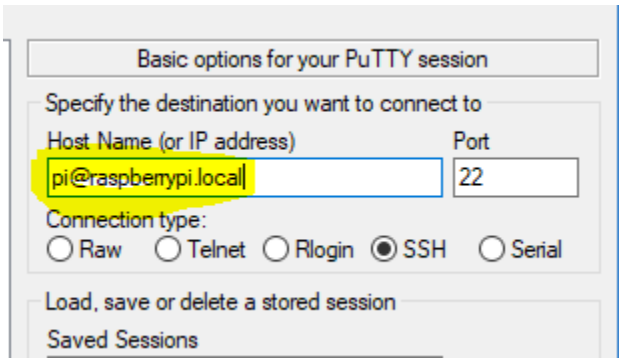
   Use Save As "All files" to **K:\wpa_supplicant.conf**
   Again, do not let Notepad change it to "wpa_supplicant.conf.**txt**"!!

When you boot the Raspberry the first time, Raspbian will look for these and connect to your Wifi. You will have to look on your Router for the IP address, though, since its auto assigned.

3. Insert the microSD card into the Pi and plug in the power now. It will take a few minutes to boot.

4. To remotely log in to your Raspberry Pi, you will need to find its IP address.
   You can try:

$ ssh pi@raspberrypi.local
(Or from Putty, enter hostname **pi@raspberrypi.local**



***Note**: If this fails, you will need to see if your Router will show the IP addresses of your local devices.*
Example: `ssh pi@192.168.X.X`

Default password is "**raspberry**"