Simple Water Sensor Using Node-RED

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Raspberry Pi Night
January 19, 2017

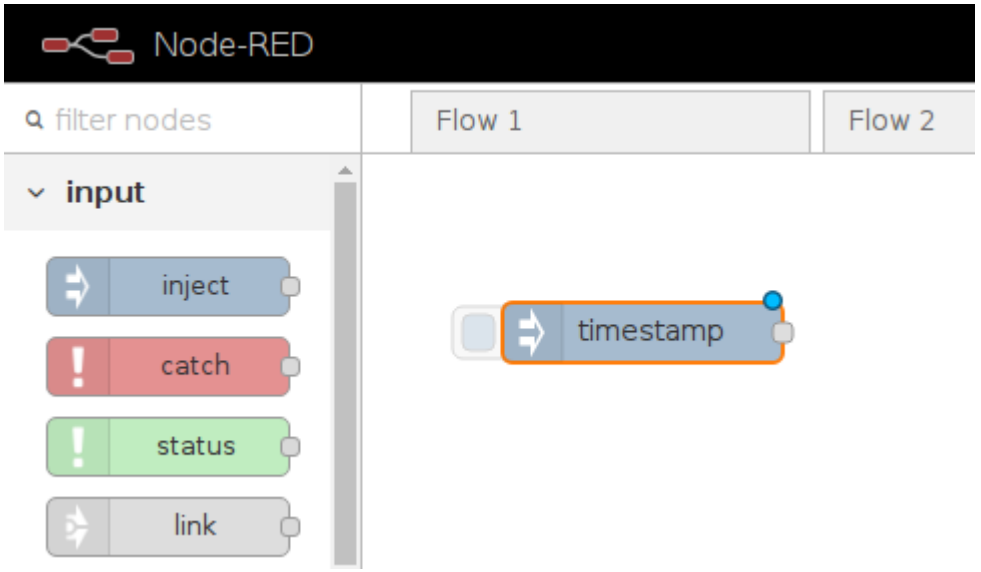
Create New Gmail Account

- Create new gmail account specifically for sending messages from the Pi
- Set a password different from your primary email account
- Turn on Less Secure Apps feature. Make sure you are using your new gmail account
- https://www.google.com/settings/u/1/security/lesssecureapps?pageId=none
- This protects your primary email from being hacked

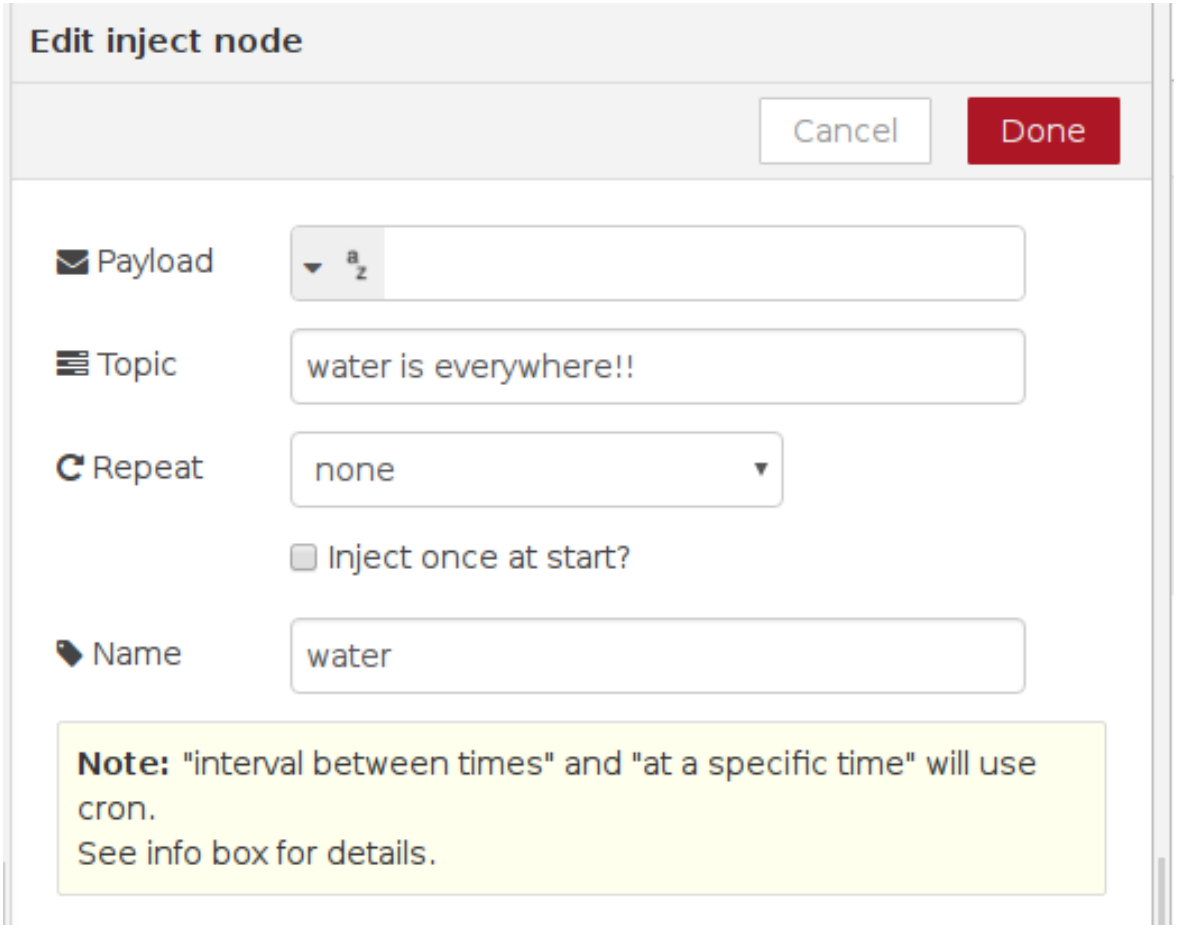
Start Node-RED

- Click on Raspberry → Programming → Node-RED
- A terminal window will open
- Open Firefox or Chromium browser
- http://localhost:1880
- Create a new tab by clicking on the +

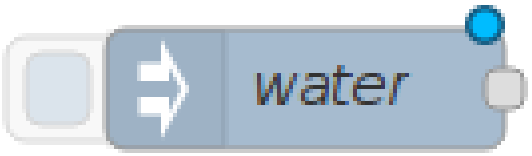
Test Gmail Send

- Drag Inject node to canvas
- 

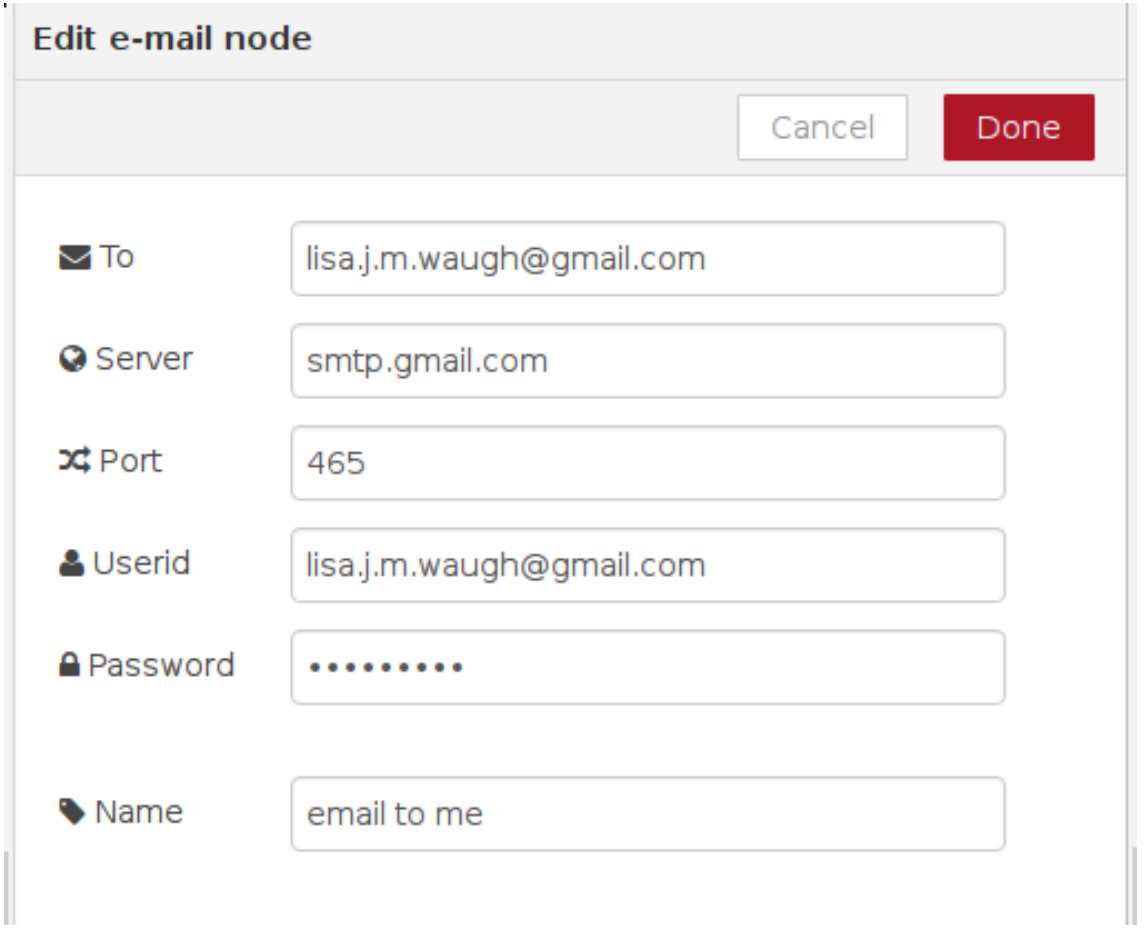
Configure Inject Node



Drag email node to Canvas



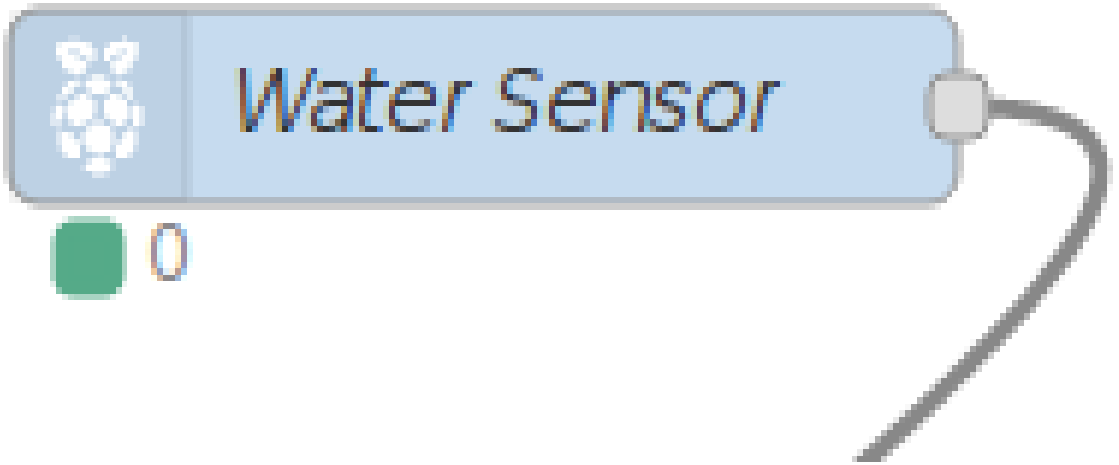
Configure email Node



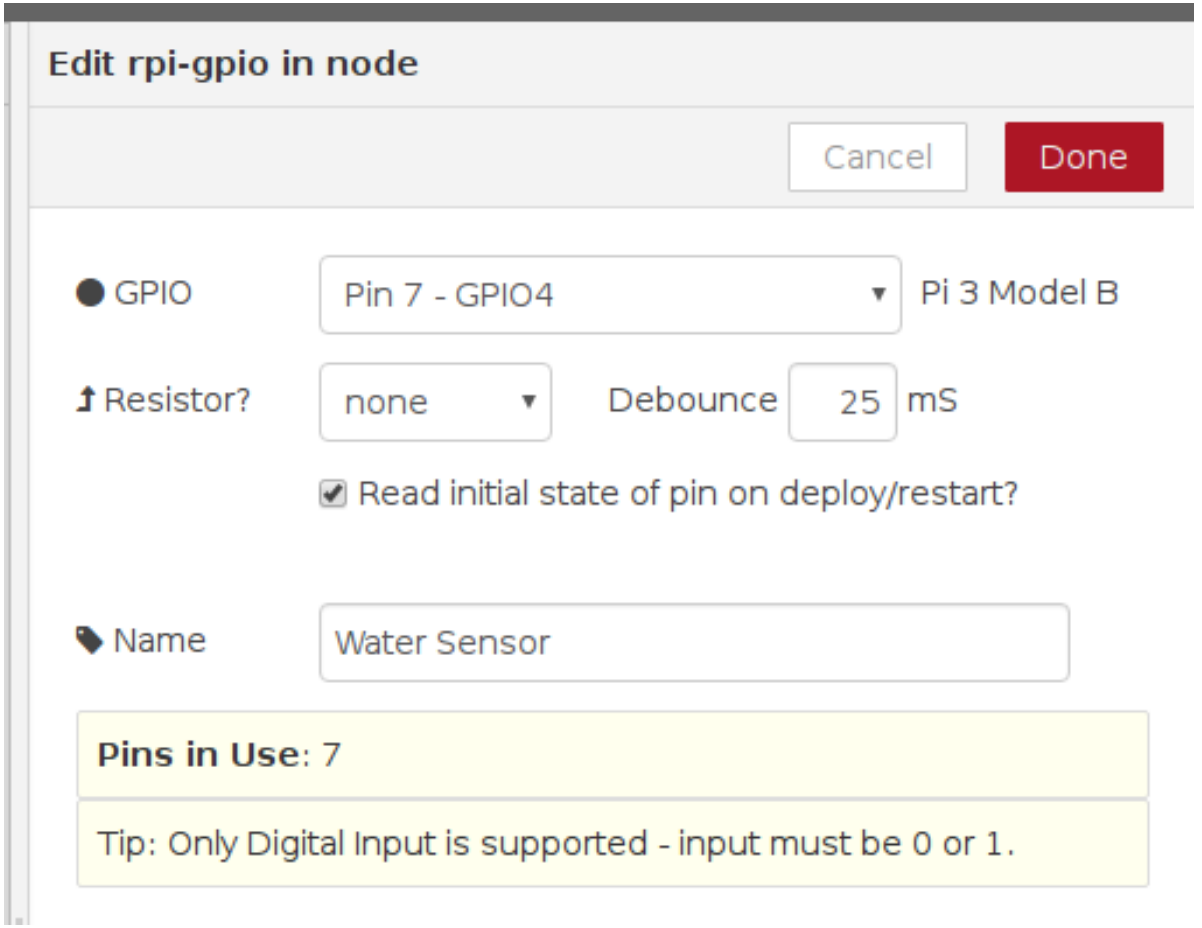
Finish Gmail Test

- Join the Inject node to the Email node
- Deploy
- Click on Inject node
- Check email

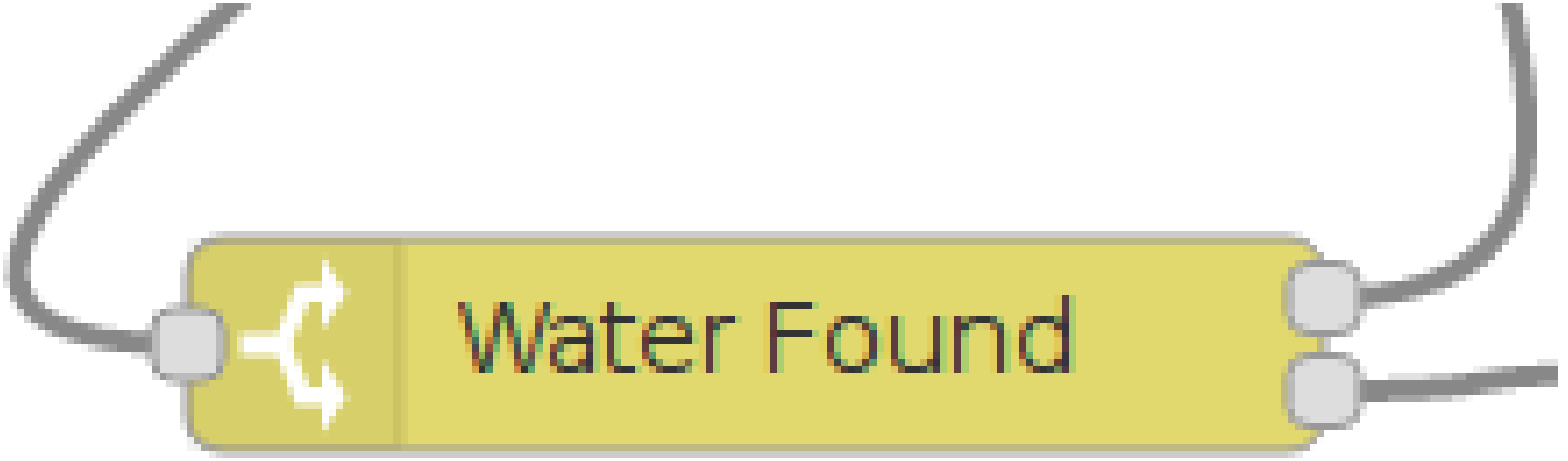
Add Raspberry Pi GPIO Node



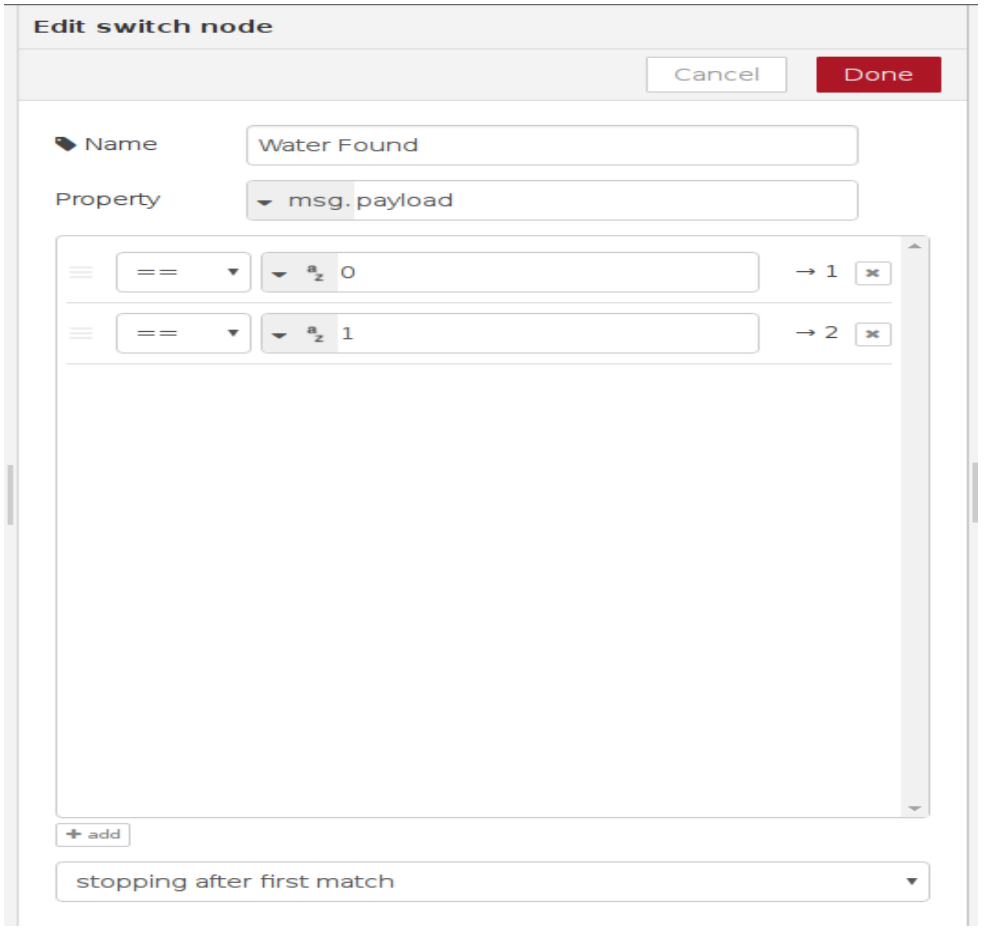
Configure rpi-gpio Node



Add switch Node

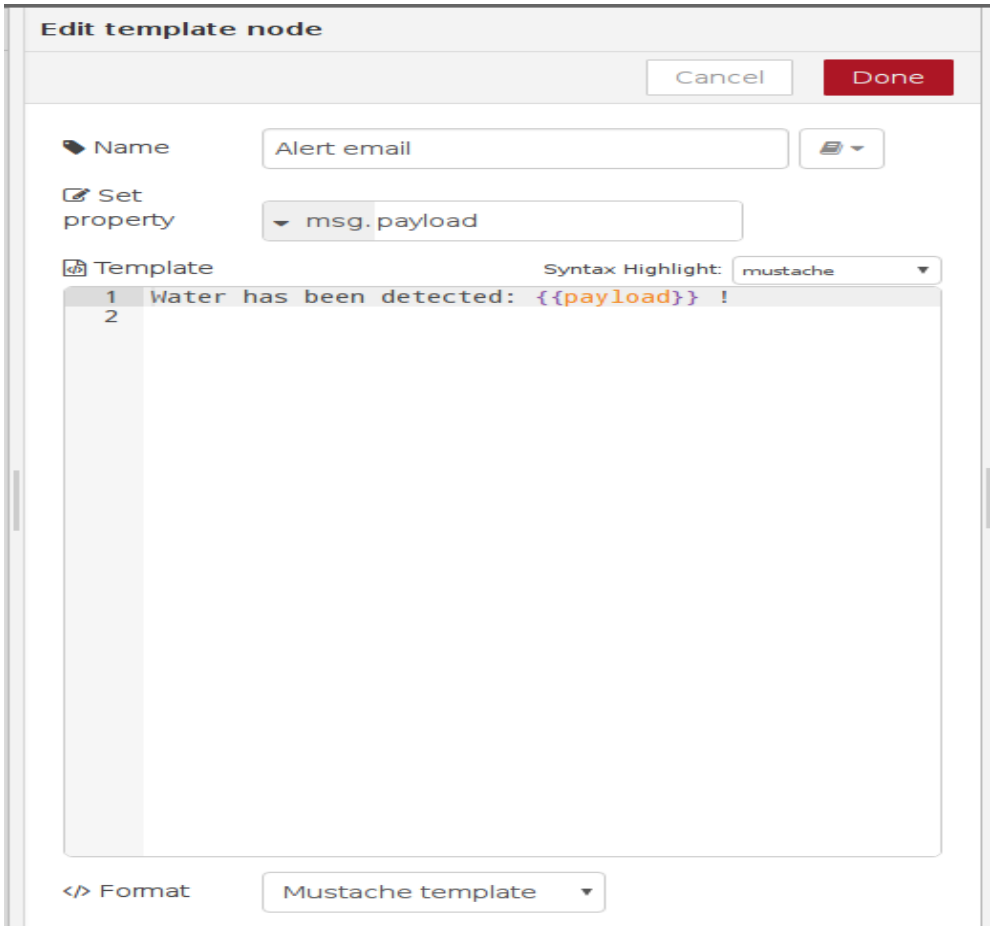


Configure switch Node

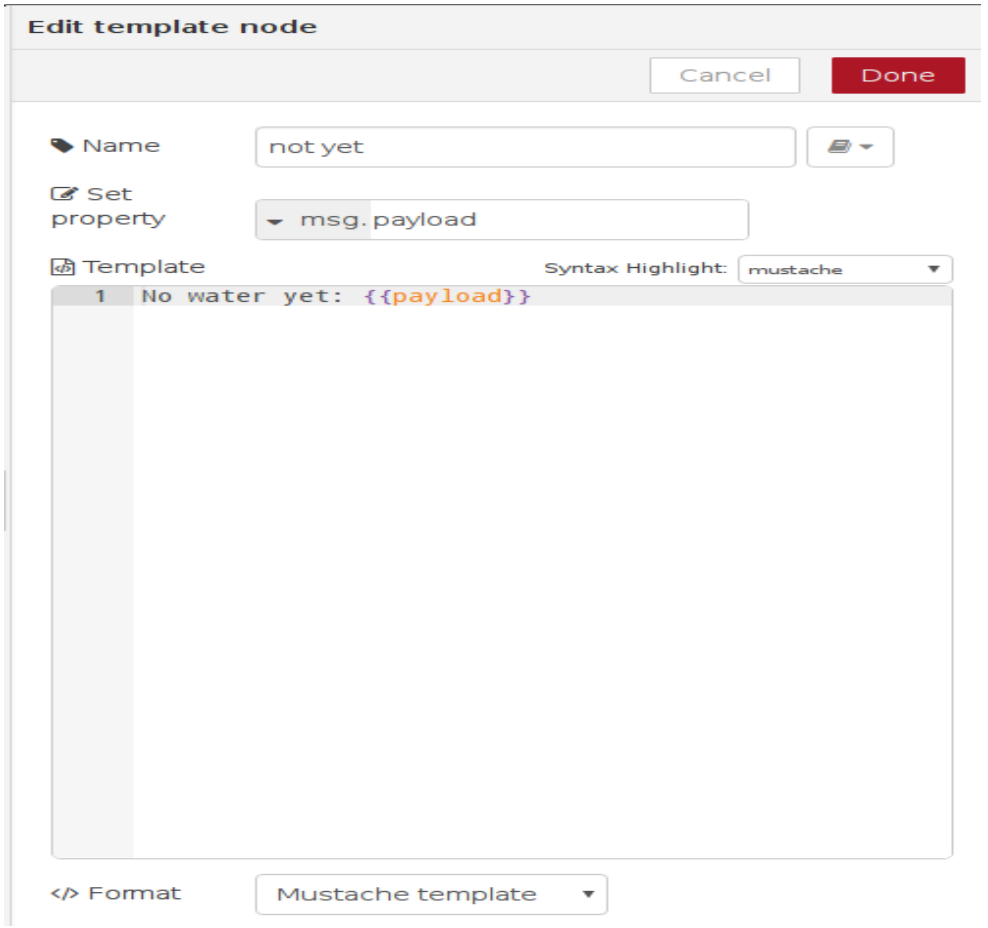


Add 2 function Nodes

Configure first function node



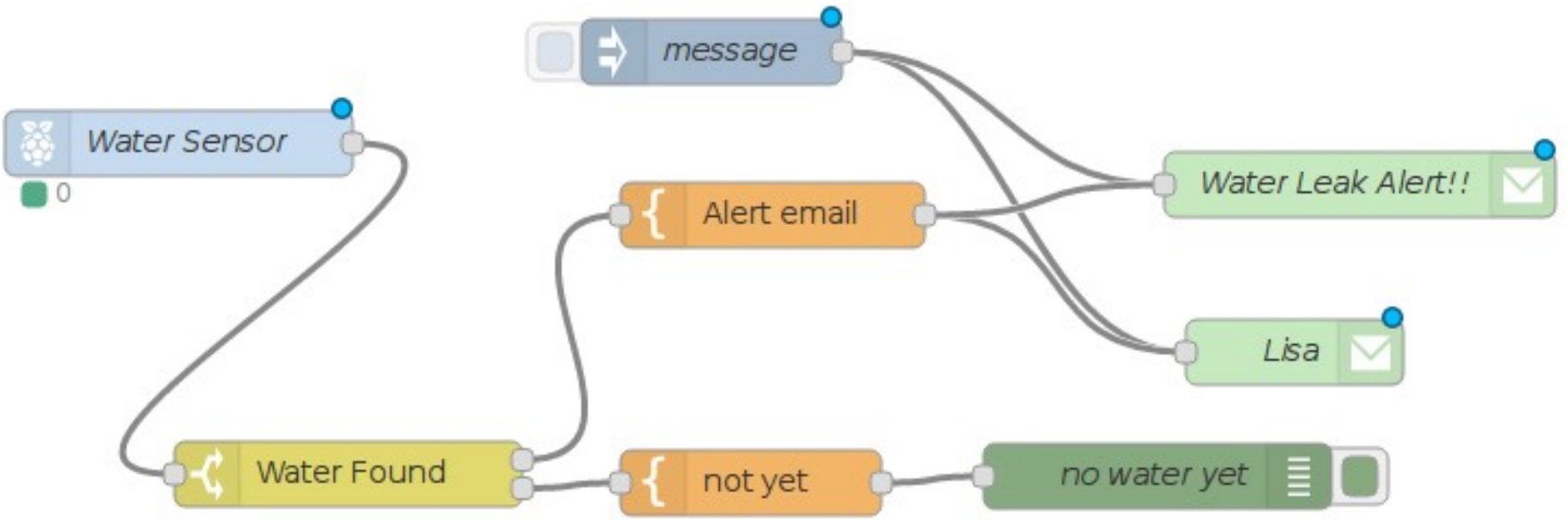
Configure second function Node



Add Second email Node

- This will be for the text message
- Configure like the email node except change the To field
- See this link for the correct format for your phone carrier
- http://www.digitaltrends.com/mobile/how-to-send-e-mail-to-sms-text/

Add Debug Node and Wire Flow



Connect Sensor

- Connect ribbon cable to sensor
  - Black = ground
  - Red = 5v
  - Yellow = Analog
- Connect gpio pins to ribbon cable
  - Black = gnd
  - Red = 5v
  - Yellow = Pin 7 (GPIO 4)

Time to Test

- Deploy the flow
- Make sure no blue dots or red triangles are present on any nodes
- You should see No Water Yet messages in the debug panel on the right
- Add water to the sensor and you should get email and text message that water was detected

References

- https://support.google.com/accounts/answer/185833?hl=en
- https://www.google.com/settings/u/1/security/lesssecureapps?pageId=none
- http://www.digitaltrends.com/mobile/how-to-send-e-mail-to-sms-text/

Generate App Password for Gmail

- Visit your App passwords page. You may be asked to sign in to your Google Account.
- At the bottom, click Select app and choose **mail**.
- Click Select device and choose **other**. You will be prompted for a name.
- Select **Generate**.
- Save the App password (the 16 character code in the yellow bar) on your device. We will use it in Node-RED.
- Select Done.

Once you are finished, you won't see that App password code again. However, you will see a list of apps and devices you've created App passwords for.

Note: You may not be able to create an App password for less secure apps. Learn more about allowing less secure apps.