ICP7

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MonkeyCanCode edited this page on Mar 9 · 1 revision

Source

Video

Introduction

For ICP7, I linked Raspberry Pi to Node-RED and use Raspberry Pi to interact with LED light and DHT sensor. Then I send tweet with the data recorded from DHT sensor with Raspberry Pi.

Objectives

The objective for this ICP is to learn how to link Raspberry Pi with Node-RED and how to read data from DHT sensor from Raspberry Pi and Node-RED. Also, practice how to interact with LED light with Node-RED by using Raspberry Pi.

Approaches/Methods

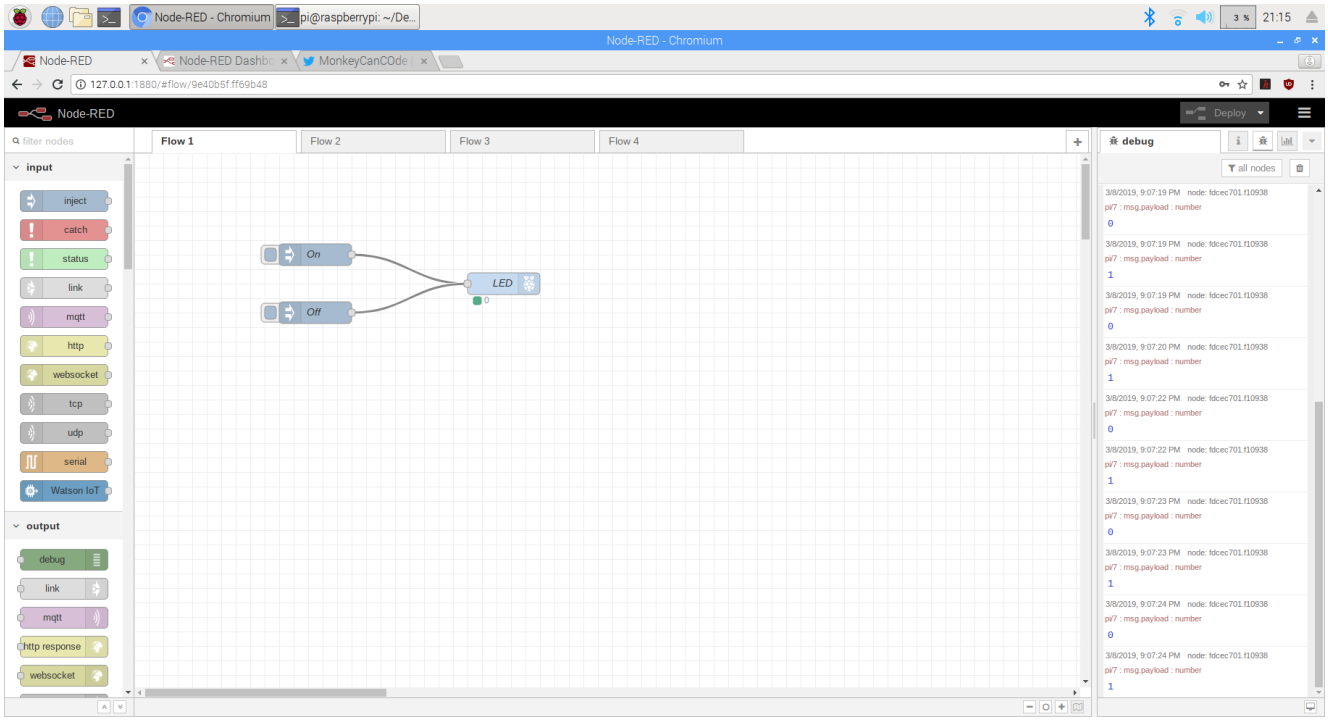
1. Set up Raspberry Pi
2. Install/update node.js and NPM (the default Raspberry Pi is using old version of Node-RED and doesn't come with NPM)
3. Create a flow for turn on/off LED light with a click
4. Create a flow for turn on/off LED light with a button press
5. Create a flow for display data collected from DHT22 from Raspberry Pi on Node-RED's dashboard
6. Create a flow to simulate traffic light
7. Create a flow to posted data collected from DHT22 from Raspberry Pi to Twitter

Workflow

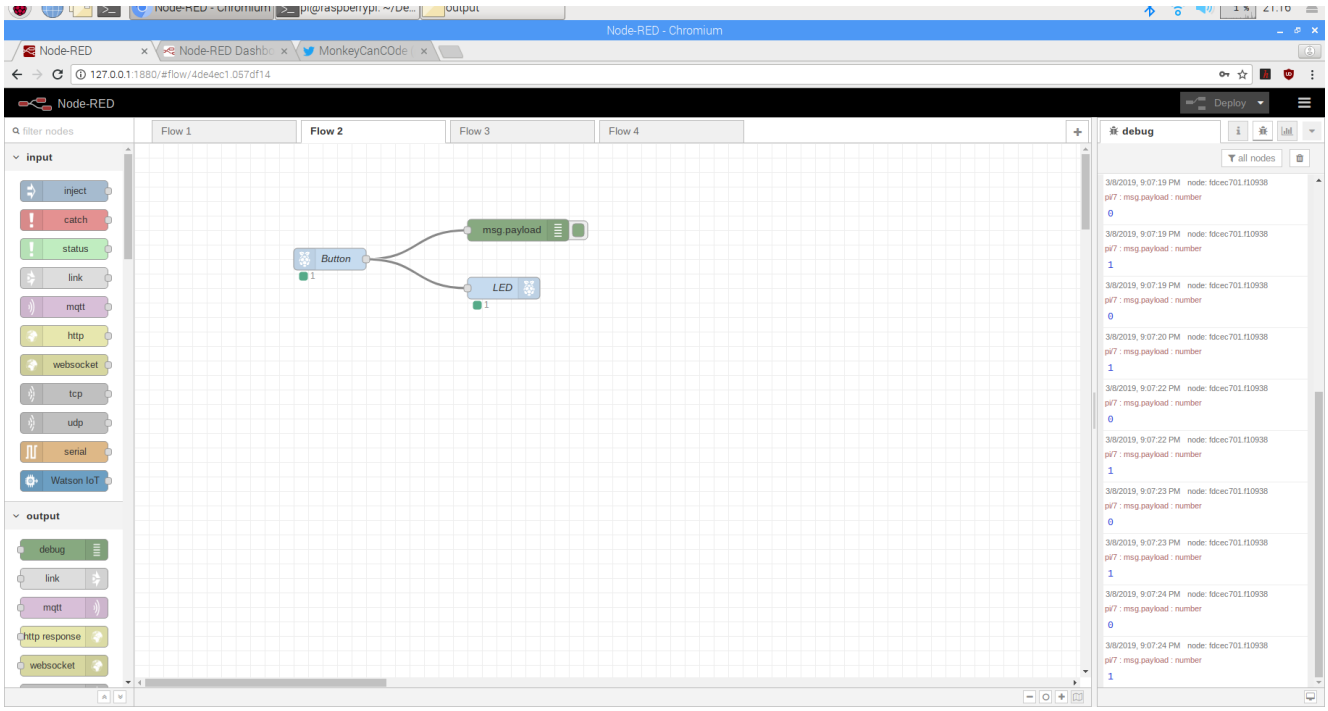
1. There are several pre-steps needed for this ICP (setup Raspberry Pi, install dependencies for DHT, update node.js, install npm, etc.)
2. For first flow, as user clicks on the input (either on/off), the LED light will also be on/off
3. For second flow, as user presses the button, the LED will be on/off
4. For third flow, as user click on the input, Node-RED will collect DHT sensor data from Raspberry Pi and display on the Node-Red's dashboard
5. For fourth flow, as user click on the input, the LED lights will simulate traffic light
6. For fifth flow, as user click on the input, Node-RED will first collect DHT sensor data from Raspberry Pi then call a function node to construct a tweet message and send this tweet message to Twitter

Diagram

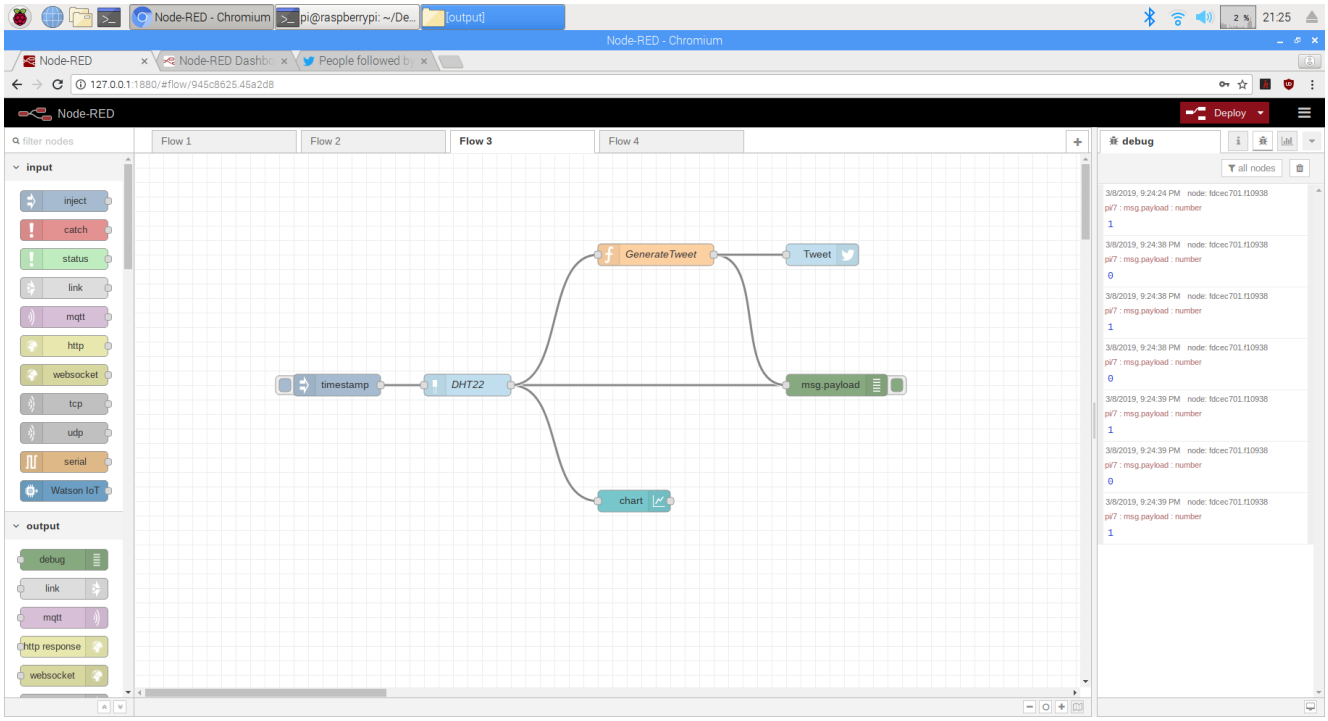
Flow 1:



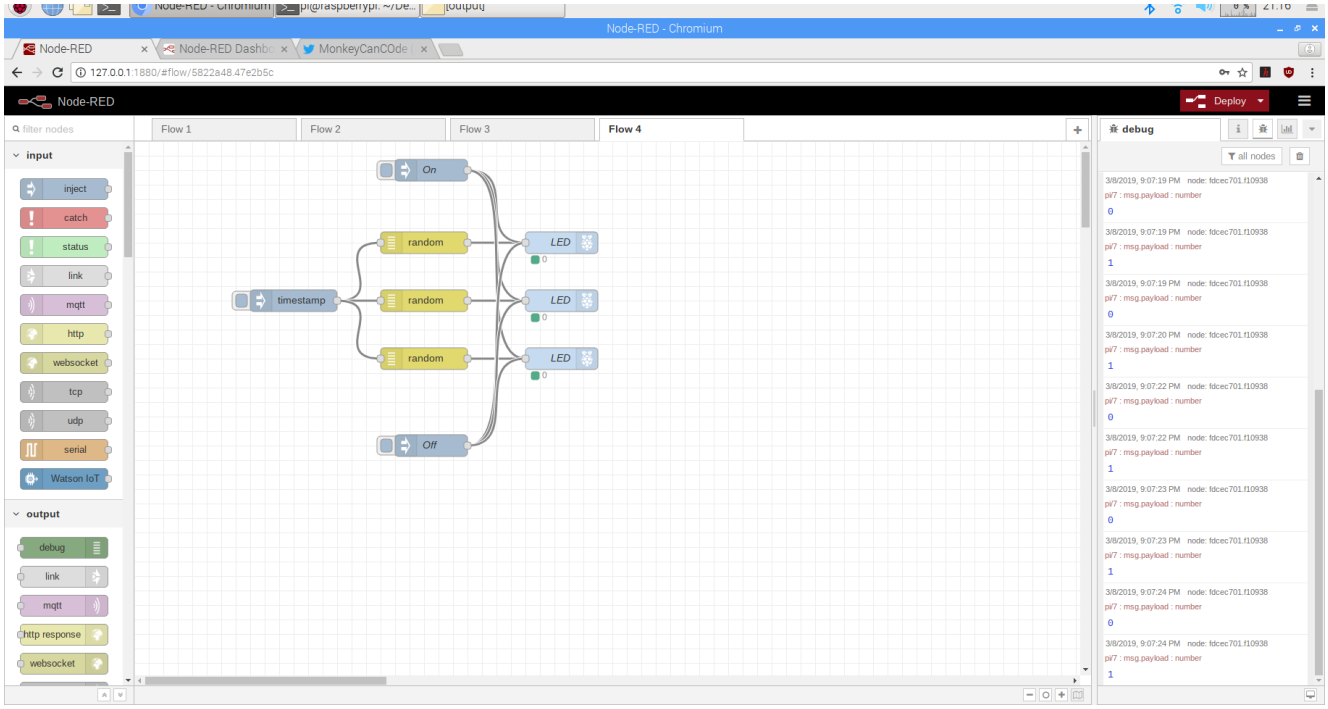
Flow 2:



Flow 3 and 5:



Flow 4:



Parameters

None

Evaluation & Discussion

This ICP is an introduction for how to link Raspberry Pi to Node-RED and how to read sensor data from Raspberry Pi.

Conclusion

For this ICP, I got to play with more features in Node-RED and create couple flows to interact with Raspberry Pi from Node-RED.

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