

การสร้าง MQTT Server บน Raspberry Pi เพื่อใช้งาน Chatbot LINE ในฟาร์มอัจฉริยะ	
Chatbot LINE from Raspberry Pi MQTT Server for Smart Farming	
ชื่อ-สกุล : อนุรักษ์ ไต่แอ	รหัสนักศึกษา : B6310158
6/6 –คำถามท้ายบทเพื่อทดสอบความเข้าใจ	

Quiz_201 – Node-RED UI

- แสดงข้อมูลที่ได้ทำการทดสอบ

Code nodejs

```
[
  {
    "id": "77af658ffa4711d3",
    "type": "tab",
    "label": "M2_Quiz201",
    "disabled": false,
    "info": "",
    "env": []
  },
  {
    "id": "b2848cd6.ca5c7",
    "type": "ui_slider",
    "z": "77af658ffa4711d3",
    "tab": "5969fd52.22b424",
    "name": "Slider",
    "topic": "",
    "group": "Control LED",
    "order": "2",
    "min": "0",
    "max": "100",
    "x": 610,
    "y": 280,
    "wires": [
      [
        "1cca457a.60fb5b",
        "732721f2.32913",
        "3c7de1d6.58b99e",
        "869c189f.bb1d18"
      ]
    ]
  },
  {
    "id": "1cca457a.60fb5b",
    "type": "ui_gauge",
    "z": "77af658ffa4711d3",
    "tab": "5969fd52.22b424",
    "name": "Gauge",
    "group": "Control LED",
    "order": "3",
    "format": "{{value}}",
    "min": 0,
    "max": "100",
    "x": 1023,
    "y": 368,
```

```

    "wires": []
  },
  {
    "id": "732721f2.32913",
    "type": "ui_chart",
    "z": "77af658ffa4711d3",
    "tab": "5969fd52.22b424",
    "name": "",
    "group": "Control LED",
    "order": "4",
    "interpolate": "linear",
    "nodata": "No Data",
    "removeOlder": 1,
    "removeOlderUnit": "86400",
    "x": 1023,
    "y": 474,
    "wires": [
      [],
      []
    ]
  },
  {
    "id": "3c7de1d6.58b99e",
    "type": "rpi-gpio out",
    "z": "77af658ffa4711d3",
    "name": "LED",
    "pin": "21",
    "set": "",
    "level": "0",
    "freq": "",
    "out": "pwm",
    "bcm": true,
    "x": 1026,
    "y": 290,
    "wires": []
  },
  {
    "id": "828cc789.3d3b08",
    "type": "function",
    "z": "77af658ffa4711d3",
    "name": "Function",
    "func": "if(msg.payload == \"true\"){\n msg.payload = 1;\n}\nelse{\n\nmsg.payload = 0;\n} \nreturn msg;",
    "outputs": "1",
    "noerr": 0,
    "initialize": "",
    "finalize": "",
    "libs": [],
    "x": 860,
    "y": 560,
    "wires": [
      [
        "b2848cd6.ca5c7"
      ]
    ]
  },
  {
    "id": "58638633.9de238",
    "type": "ui_switch",

```

```

    "z": "77af658ffa4711d3",
    "tab": "5969fd52.22b424",
    "name": "Switch",
    "topic": "",
    "group": "Control LED",
    "order": 1,
    "onvalue": "true",
    "offvalue": "false",
    "x": 593,
    "y": 557,
    "wires": [
      [
        "828cc789.3d3b08"
      ]
    ]
  },
  {
    "id": "869c189f.bb1d18",
    "type": "function",
    "z": "77af658ffa4711d3",
    "name": "SetSwitch",
    "func": "if(msg.payload > 0)\n msg.payload = 1;\nelse \n msg.payload = 0;\n\nreturn msg;\n",
    "outputs": 1,
    "noerr": 0,
    "initialize": "",
    "finalize": "",
    "libs": [],
    "x": 602,
    "y": 430,
    "wires": [
      [
        "58638633.9de238"
      ]
    ]
  },
  {
    "id": "5969fd52.22b424",
    "type": "ui_tab",
    "name": "TEST1",
    "icon": "dashboard",
    "order": "1"
  }
]

```

รูปการทดสอบ 1 – UI

The screenshot displays a web browser window with a green header bar containing the text "TEST1". The main content area shows a control interface for an LED. The interface includes a title "Control LED", a "Switch" toggle, a "Slider" control, a "Gauge" with a yellow arc and the number 52, and a line graph showing a sharp spike in data.



Quiz_202 – Node-RED to LINE notify

- แสดงข้อมูลที่ได้ทำการทดสอบ

Code nodejs

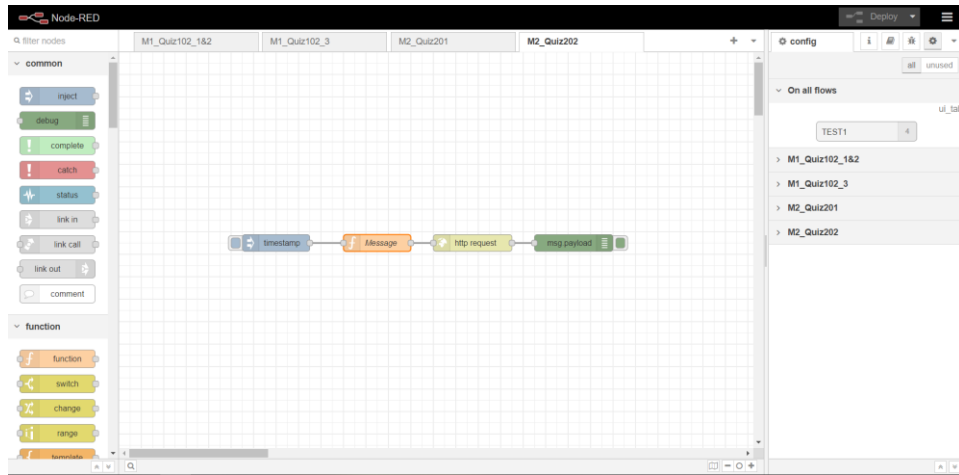
```
[
  {
    "id": "27ca0104b4dc9516",
    "type": "tab",
    "label": "M2_Quiz202",
    "disabled": false,
    "info": "",
    "env": []
  },
  {
    "id": "1979c14ec2ad4523",
    "type": "http request",
    "z": "27ca0104b4dc9516",
    "name": "",
    "method": "POST",
    "ret": "txt",
    "paytoqs": "ignore",
    "url": "https://notify-api.line.me/api/notify",
    "tls": "",
    "persist": false,
    "proxy": "",
    "insecureHTTPParser": false,
    "authType": "",
    "senderr": false,
    "headers": [],
    "x": 630,
    "y": 340,
    "wires": [
      [
        "fae20fc5b1825096"
      ]
    ]
  },
  {
    "id": "fae20fc5b1825096",
    "type": "debug",
    "z": "27ca0104b4dc9516",
    "name": "",
    "active": true,
    "tosidebar": true,
    "console": false,
    "tostatus": false,
    "complete": "payload",
    "targetType": "msg",
    "statusVal": "",
    "statusType": "auto",
    "x": 810,
    "y": 340,
    "wires": []
  },
  {
    "id": "81be9c63fe920de1",
    "type": "function",
```

```

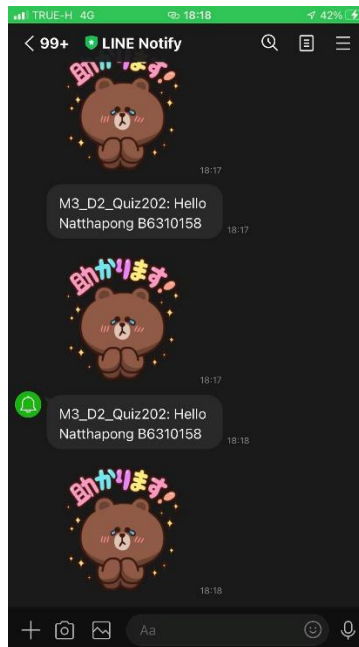
    "z": "27ca0104b4dc9516",
    "name": "Message",
    "func": "msg.token =
'fKV8kEpC9b0kxSBxUnptrh5MswqFRpCzqPW2OFKyL9F';\nmsg.message = 'Hello
Natthapong B6310158';\nmsg.stickerPackageId = 8515;\nmsg.stickerId =
16581244;\n\nmsg.headers = {\n 'content-type':'application/x-www-form-
urlencoded',\n 'Authorization':'Bearer ' + msg.token\n};\nmsg.payload = {\n 'message':
msg.message,\n 'stickerPackageId':msg.stickerPackageId,\n
'stickerId':msg.stickerId\n};\nreturn msg;\n",
    "outputs": 1,
    "noerr": 0,
    "initialize": "",
    "finalize": "",
    "libs": [],
    "x": 460,
    "y": 340,
    "wires": [
      [
        "1979c14ec2ad4523"
      ]
    ]
  },
  {
    "id": "e3b7ac760fabfe77",
    "type": "inject",
    "z": "27ca0104b4dc9516",
    "name": "",
    "props": [
      {
        "p": "payload"
      },
      {
        "p": "topic",
        "vt": "str"
      }
    ],
    "repeat": "",
    "crontab": "",
    "once": false,
    "onceDelay": 0.1,
    "topic": "",
    "payload": "",
    "payloadType": "date",
    "x": 280,
    "y": 340,
    "wires": [
      [
        "81be9c63fe920de1"
      ]
    ]
  }
]

```

หน้าจอ node flow ที่ได้ทดสอบ



รูปการทดสอบ 1 – LINE



รูปการทดสอบ 2

```
9/6/2566 18:17:45 node: fae20fc5b1825096
msg.payload : string[29]
{"status":200,"message":"ok"}"

9/6/2566 18:17:54 node: fae20fc5b1825096
msg.payload : string[29]
{"status":200,"message":"ok"}"

9/6/2566 18:18:02 node: fae20fc5b1825096
msg.payload : string[29]
{"status":200,"message":"ok"}"
```

Quiz_203 – Node-RED to Google Sheet

- แสดงข้อมูลที่ได้ทำการทดสอบ

Code nodejs

```
[
  {
    "id": "9abe0f58e7be3cd6",
    "type": "tab",
    "label": "M2_Quiz203",
    "disabled": false,
    "info": "",
    "env": []
  },
  {
    "id": "1d8fcdc0dca13da7",
    "type": "inject",
    "z": "9abe0f58e7be3cd6",
    "name": "",
    "props": [
      {
        "p": "payload"
      },
      {
        "p": "topic",
        "vt": "str"
      }
    ],
    "repeat": "",
    "crontab": "",
    "once": false,
    "onceDelay": 0.1,
    "topic": "",
    "payload": "",
    "payloadType": "date",
    "x": 280,
    "y": 440,
    "wires": [
      [
        "29967af7bda0c65c"
      ]
    ]
  },
  {
    "id": "dbbe8142e2563c8d",
    "type": "debug",
    "z": "9abe0f58e7be3cd6",
    "name": "",
    "active": true,
    "tosidebar": true,
    "console": false,
    "tostatus": false,
    "complete": "payload",
    "targetType": "msg",
    "statusVal": "",
    "statusType": "auto",
    "x": 790,
    "y": 440,
```

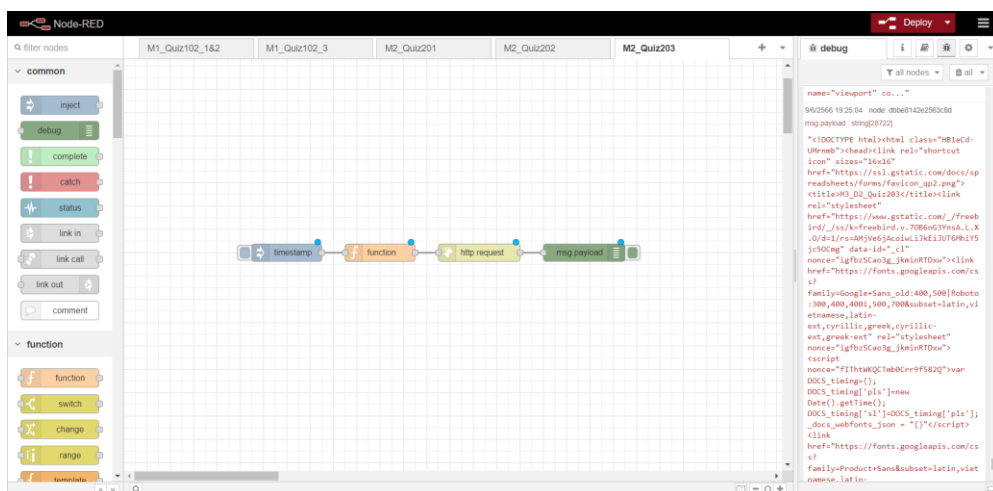


```

    "wires": []
  },
  {
    "id": "29967af7bda0c65c",
    "type": "function",
    "z": "9abe0f58e7be3cd6",
    "name": "",
    "func": "var data = {}\\ndata.Tempp =
parseFloat((Math.random()*20)+20).toFixed(2);\\ndata.Humid
=parseFloat((Math.random()*20)+40).toFixed(2);\\ndata.Light =
parseFloat((Math.random()*20)+60).toFixed(2);\\ndata.RSSI =
parseFloat((Math.random()*20)+80).toFixed(2);\\n\\nmsg.payload = data\\n\\nreturn
msg;",
    "outputs": 1,
    "noerr": 0,
    "initialize": "",
    "finalize": "",
    "libs": [],
    "x": 440,
    "y": 440,
    "wires": [
      [
        "26fe2f978a5bda14"
      ]
    ]
  },
  {
    "id": "26fe2f978a5bda14",
    "type": "http request",
    "z": "9abe0f58e7be3cd6",
    "name": "",
    "method": "POST",
    "ret": "txt",
    "paytoqs": "ignore",
    "url": "https://docs.google.com/forms/d/e/1FAIpQLScy3b42IYt0hKvC7MNUwrb-
mqWx4bF-
S87QU0n1xH9dBAzXyA/formResponse?entry.1723601442={{payload.Tempp}}&entry.1
883023337={{payload.Humid}}&entry.899155965={{payload.Light}}&entry.20522457
47={{payload.RSSI}}",
    "tls": "",
    "persist": false,
    "proxy": "",
    "insecureHTTPParser": false,
    "authType": "",
    "senderr": false,
    "headers": [],
    "x": 610,
    "y": 440,
    "wires": [
      [
        "dbbe8142e2563c8d"
      ]
    ]
  }
]

```

หน้าจอ node flow ที่ได้ทดสอบ



รูปการณ์ทดสอบ 1 – Google Sheet

The screenshot shows a Google Sheet with the following data:

	A	B	C	D	E	F	G	H	I	J
	วันที่เวลา	Temperature (C)	Humidity (%)	Light (%)	RSSI (dB)					
10	9/6/2023, 19:15:48									
11	9/6/2023, 19:24:51	33.61	43.69	74.94	94.2					
12	9/6/2023, 19:37:57	33.79	41.6	79.6	86.51					
13	9/6/2023, 19:24:59	27.46	45.91	67.09	89.83					
14	9/6/2023, 19:25:00	36.28	54.79	60.59	93.46					
15	9/6/2023, 19:25:00	20.3	44.12	74.28	98.04					
16	9/6/2023, 19:25:00	34.67	53.08	67.74	90.95					
17	9/6/2023, 19:25:00	39.46	41.15	77.28	86.88					
18	9/6/2023, 19:25:00	29.77	41.5	78.37	83.8					
19	9/6/2023, 19:25:00	26.97	50.14	61.13	86.6					
20	9/6/2023, 19:25:00	29.33	47.97	76.33	87.4					
21	9/6/2023, 19:25:00	27.32	59.14	62.49	80.4					
22	9/6/2023, 19:25:01	30.97	42.07	78.16	97.76					
23	9/6/2023, 19:25:01	21.46	42.93	76.41	84.03					
24	9/6/2023, 19:25:01	26.25	51.26	77.83	83.95					
25	9/6/2023, 19:25:01	22.30	56.73	75.11	83.34					
26	9/6/2023, 19:25:01	30.63	46.32	67.51	82.8					
27	9/6/2023, 19:25:01	28.57	40.57	62.89	85.56					
28	9/6/2023, 19:25:02	39.27	59.9	60.65	96.57					
29	9/6/2023, 19:25:02	27.56	56.11	69.33	87.1					
30	9/6/2023, 19:25:02	36.04	51.22	66.24	96.24					
31	9/6/2023, 19:25:02	31.83	42.57	63.01	91.88					
32	9/6/2023, 19:25:02	23.81	42.41	66.31	86.4					
33	9/6/2023, 19:25:02	30.95	41.01	72	87.74					
34	9/6/2023, 19:25:02	39.67	51.77	60.17	99.59					

รูปการทดสอบ 2 -

```

9/6/2566 19:25:04 node: dbbe8142e2563c8d
msg.payload : string[28722]

"<!DOCTYPE html><html class="HB1
UMrnmb"><head><link rel="shortcut
icon" sizes="16x16"
href="https://ssl.gstatic.com/docs/s
preadsheets/forms/favicon_qp2.png">
<title>M3_D2_Quiz203</title><link
rel="stylesheet"
href="https://www.gstatic.com/_/free
bird/_/ss/k=freebird.v.70B6nG3YnsA.L
.X.O/d=1/rs=AMjVe6jAcoiwLiJkEiJUT6Mh
iY5jc5OCmg" data-id="_c1"
nonce="igfbzSCao3g_jkminRTDxw"><link
href="https://fonts.googleapis.com/c
ss?
family=Google+Sans_old:400,500|Robot
o:300,400,400i,500,700&subset=latin,
vietnamese,latin-
ext,cyrillic,greek,cyrillic-
ext,greek-ext" rel="stylesheet"
nonce="igfbzSCao3g_jkminRTDxw">
<script
nonce="fIThtWKQCTmb0Crr9f582Q">var
DOCS_timing={};
DOCS_timing['pls']=new
Date().getTime();
DOCS_timing['sl']=DOCS_timing['pls']
; _docs_webfonts_json = "{}"
</script><link
href="https://fonts.googleapis.com/c
ss?
family=Product+Sans&subset=latin,vie
tnamese,latin-
ext,cyrillic,greek,cyrillic-
ext,greek-ext" rel="stylesheet"
type="text/css"
nonce="igfbzSCao3g_jkminRTDxw"><meta
name="viewport" co..."

```