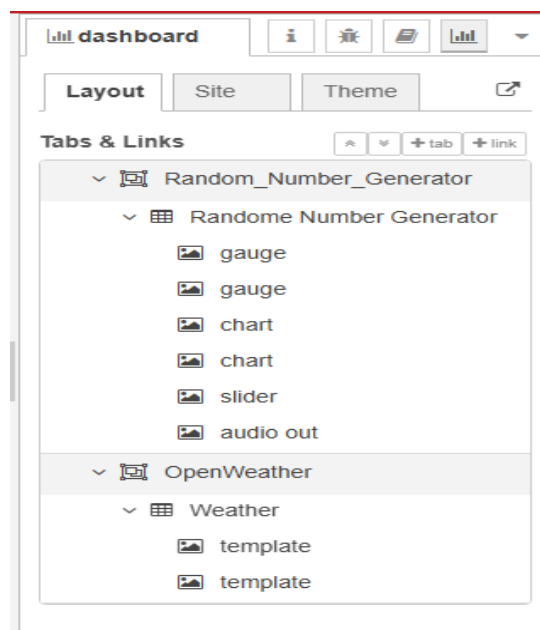


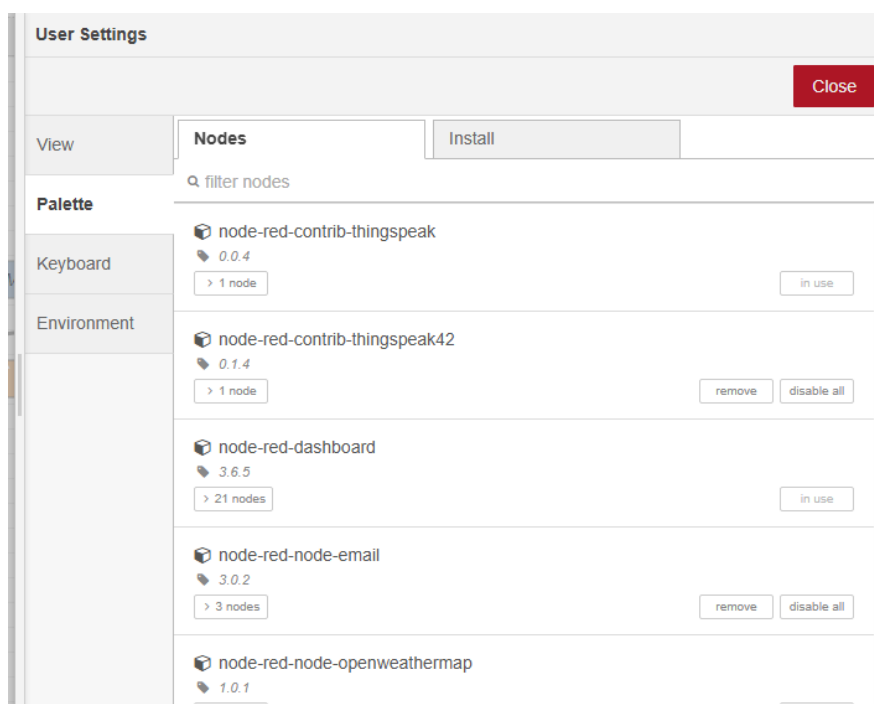
Practical 11

Write a sketch that will upload data (like temperature, Light status, etc) on thingspeak cloud.

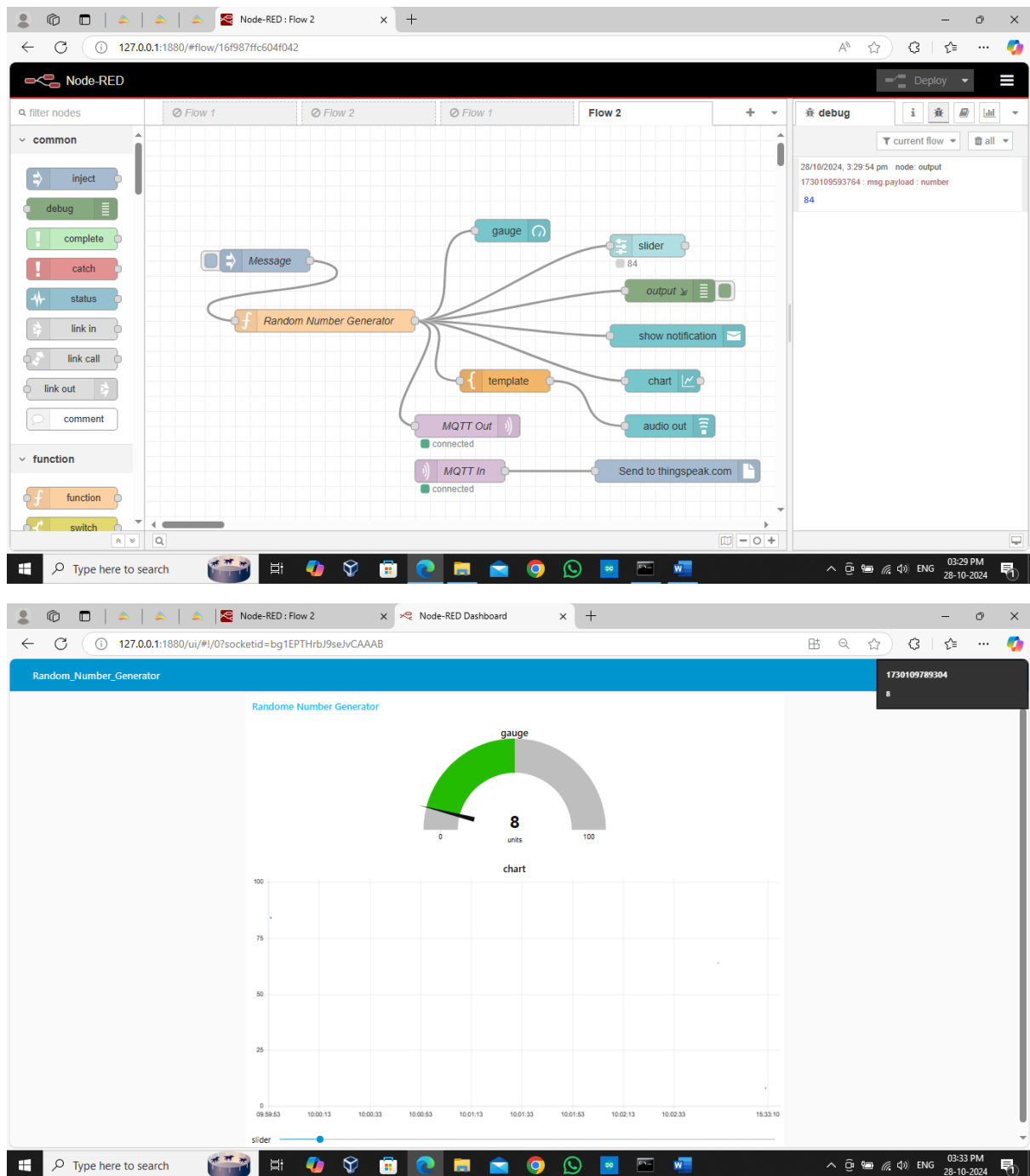
Dashboard layout:

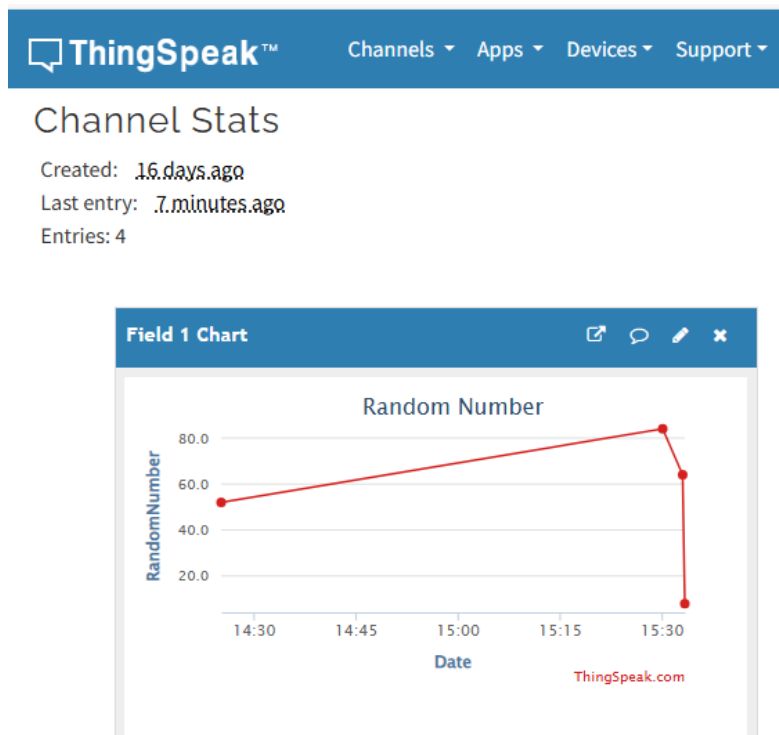


Node-Red Pallet installed module:



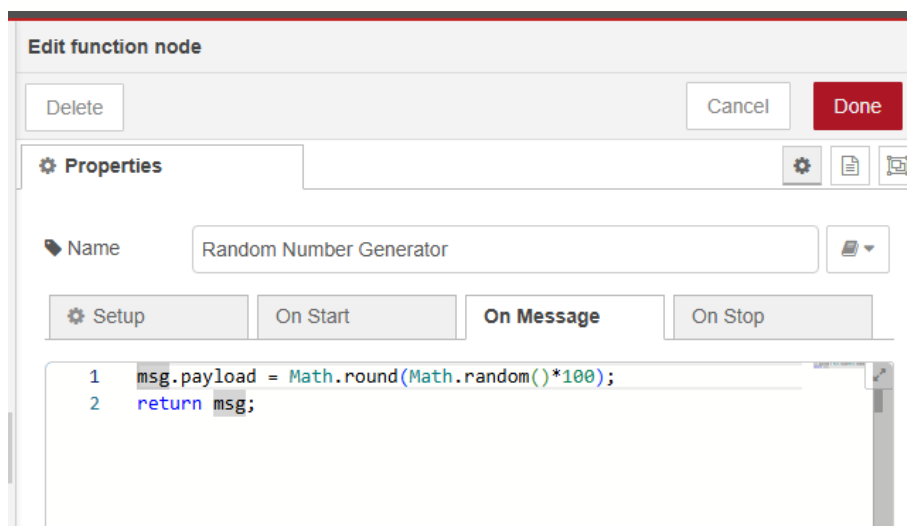
Random Number Generator With UI





Random Number Generator Code :

```
msg.payload = Math.round(Math.random()*100);  
return msg;
```



MQTT Configuration:

Note : Before use install Mosquitto application

MQTT Out:

The screenshot shows the 'Edit mqtt out node' configuration window. At the top, there are three buttons: 'Delete', 'Cancel', and 'Done'. Below the buttons is a 'Properties' tab with a gear icon and a document icon. The configuration fields are as follows:

- Server:** A dropdown menu set to 'Mqtt1' with a pencil icon and a plus sign.
- Topic:** A text input field containing 'randomnumber'.
- QoS:** A dropdown menu with a downward arrow.
- Retain:** A checkbox labeled 'Retain' followed by a dropdown menu with a downward arrow.
- Name:** A text input field containing 'MQTT Out'.

Below the fields is a yellow tip box that reads: 'Tip: Leave topic, qos or retain blank if you want to set them via msg properties.'

The screenshot shows the 'Edit mqtt-broker node' configuration window. At the top, there are three buttons: 'Delete', 'Cancel', and 'Update'. Below the buttons is a 'Properties' tab with a gear icon and a document icon. The configuration fields are as follows:

- Name:** A text input field containing 'Mqtt1'.
- Connection:** A tabbed interface with 'Connection', 'Security', and 'Messages' tabs. The 'Connection' tab is active.
- Server:** A text input field containing 'localhost'.
- Port:** A text input field containing '1883'.
- Connect automatically:** A checked checkbox.
- Use TLS:** An unchecked checkbox.
- Protocol:** A dropdown menu set to 'MQTT V3.1.1'.
- Client ID:** A text input field containing 'Leave blank for auto generated'.
- Keep Alive:** A text input field containing '60'.
- Session:** A checked checkbox labeled 'Use clean session'.

At the bottom of the window, there is a status bar with a document icon, a toggle switch labeled 'Enabled', a user icon with the number '2', and a dropdown menu labeled 'On all flows'.

MQTT In:

Gauge Setting :

Note: - Other UI components are on their default settings

Thing Speak Cloud Upload :-

Create Channel On Thing Speak Cloud :

The screenshot shows the 'Channel Settings' page for a ThingSpeak channel with ID 2693241. The page has tabs for 'Private View', 'Public View', 'Channel Settings' (selected), 'Sharing', 'API Keys', and 'Data Import / Export'. The 'Channel Settings' section shows a 'Percentage Complete' of 30%. The 'Channel ID' is 2693241, the 'Name' is 'Random Number', and the 'Description' is empty. There are two 'Field' inputs: 'Field 1' with the value 'RandomNumber' and a checked checkbox, and 'Field 2' which is empty and unchecked. A yellow banner at the bottom states: 'This website uses cookies to improve your user experience, personalize content and ads, and analyze website traffic. By continuing to use this website, you consent to our use of cookies. Please see our Privacy Policy to learn more about cookies and how to change your settings.'

Take it Write API:

The screenshot shows the 'API Keys' page for the same ThingSpeak channel. The 'Write API Key' section displays the key '3A9WD6THNG10L8Q9' and a yellow button labeled 'Generate New Write API Key'. The 'Read API Keys' section displays the key '9REPMO5G83LIM45G'. A yellow banner at the bottom states: 'This website uses cookies to improve your user experience, personalize content and ads, and analyze website traffic. By continuing to use this website, you consent to our use of cookies. Please see our Privacy Policy to learn more about cookies and how to change your settings.'

Add it in node red :

Edit ThingspeakSendSimple node

Delete Cancel Done

Properties

Name: Send to thingspeak.com

Write Key: 3A9WD6THNG10L8Q9

Field ID: 1

Note :- Field id is position number of the field in channel

Output Can be seen in thingspeak:

