

Node-RED: The Basics

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V1 JAN 2020 : V2 FEB 2021

Download Node-RED & Install

→ INSTALL Node.js

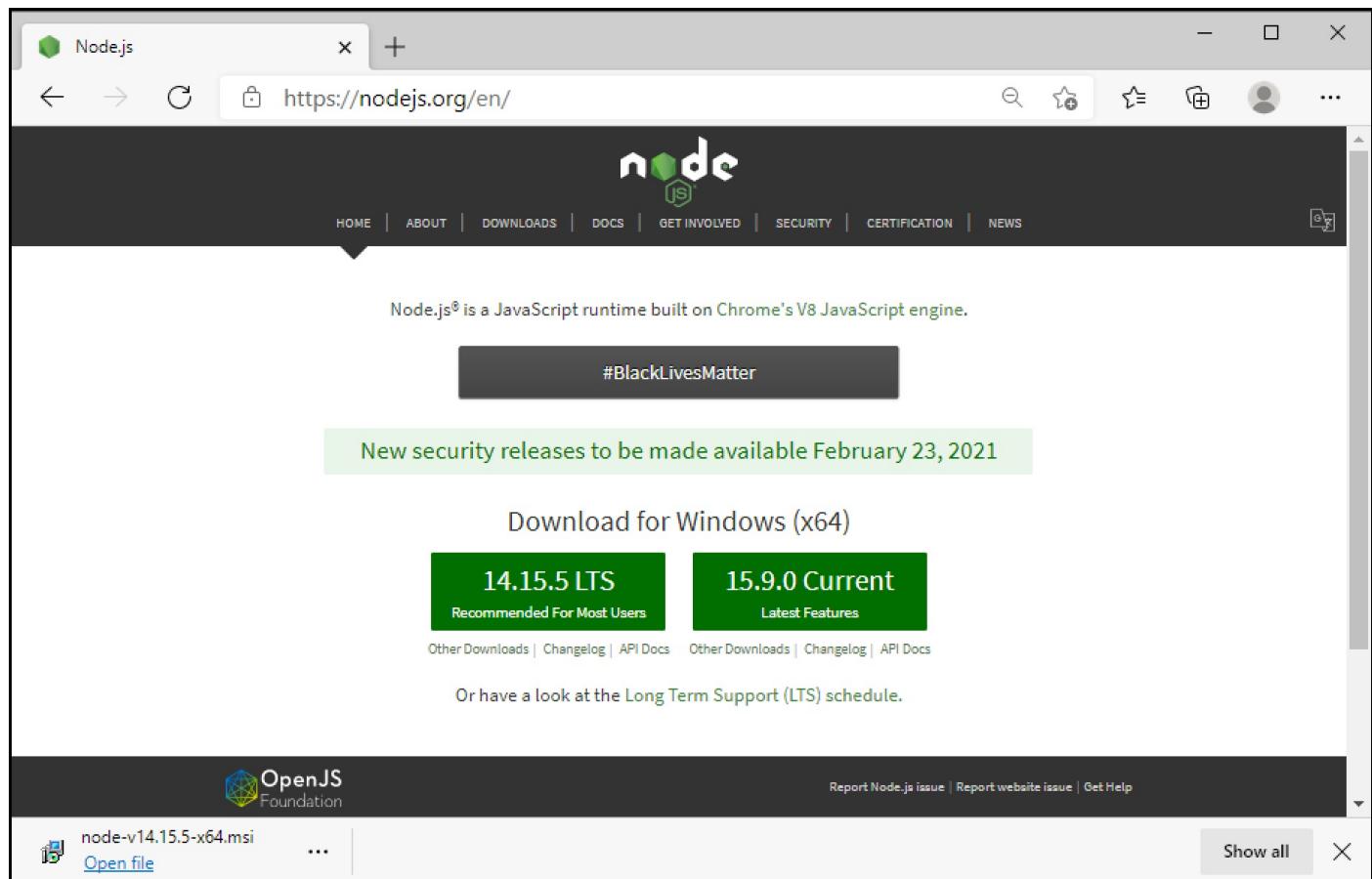
>> Download the latest Long Term Support (LTS) version of Node.js from the official [Node.js](#) home page. It will offer you the best version for your system.

>> Run the downloaded MSI file.

>> Installing Node.js requires local administrator rights; if you are not a local administrator, you will be prompted for an administrator password on install.

>> Accept the defaults when installing.

>> After installation completes, close any open command prompts and re-open to ensure new environment variables are picked up.

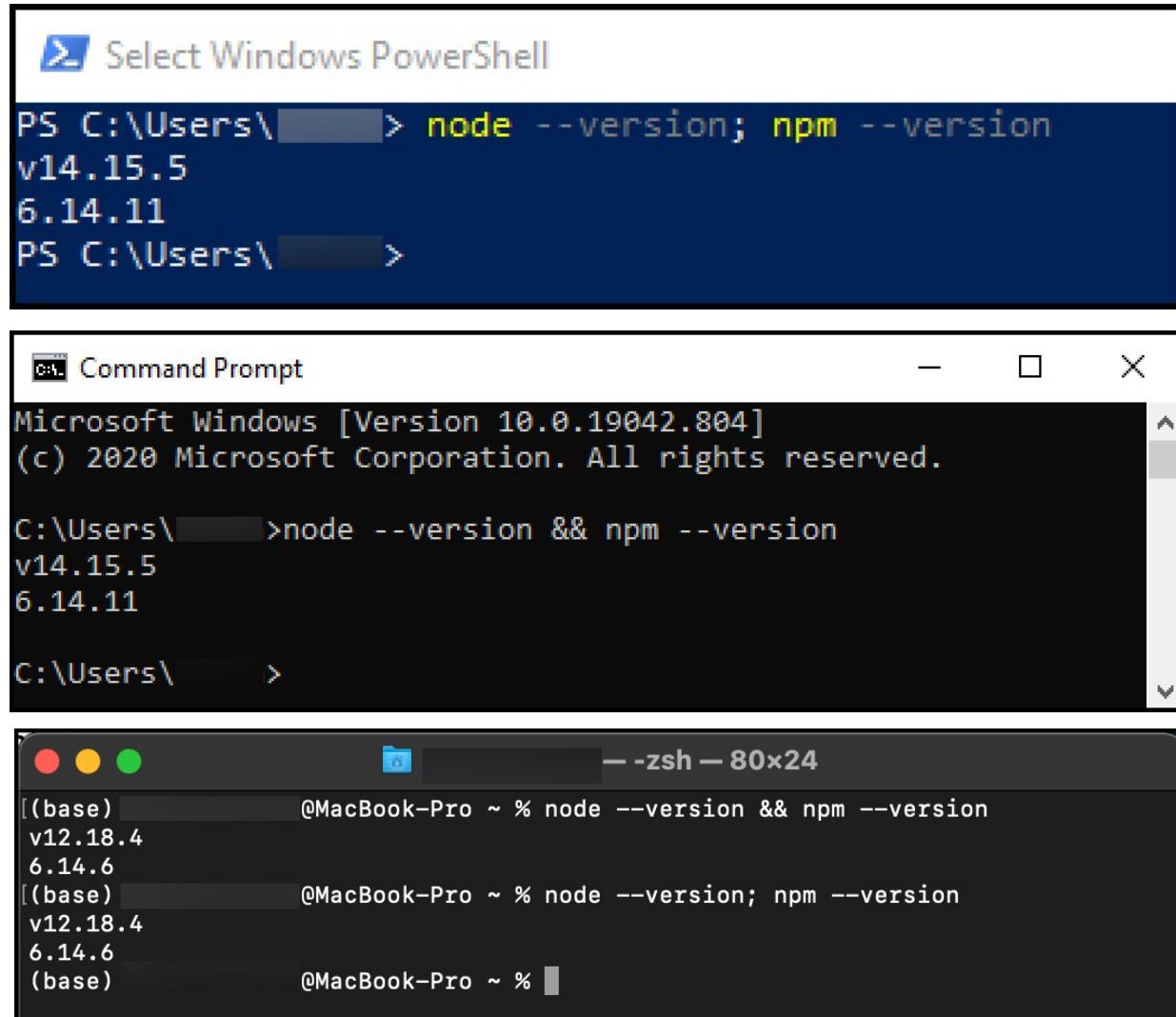


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>> Once installed, open a command prompt and run the following command to ensure Node.js and npm are installed correctly.

→ Using **Powershell & macOS terminal:**
node --version; npm -version

→ Using **cmd & macOS terminal:**
node --version && npm --version



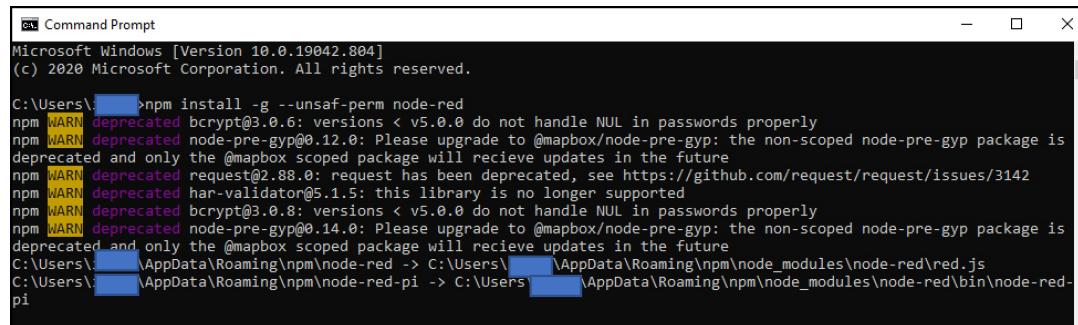
The image displays three separate command-line windows side-by-side, each showing the output of running the command `node --version` and `npm --version`.
1. Top window: Windows PowerShell interface. The command entered is `node --version; npm --version`. The output shows Node.js version v14.15.5 and npm version 6.14.11.
2. Middle window: Microsoft Windows Command Prompt interface. The command entered is `node --version && npm --version`. The output shows Node.js version v14.15.5 and npm version 6.14.11.
3. Bottom window: macOS zsh terminal interface. The command entered is `node --version && npm --version`. The output shows Node.js version v12.18.4 and npm version 6.14.6. The terminal window title is `-- zsh -- 80x24`.

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INSTALL Node-RED

>> Installing Node-RED as a global module adds the command node-red to your system path. Execute the following at the command prompt or terminal :

npm install -g --unsafe-perm node-red



```
C:\Users\[REDACTED] >npm install -g --unsafe-perm node-red
npm WARN deprecated bcrypt@3.0.6: versions < v5.0.0 do not handle NUL in passwords properly
npm WARN deprecated node-pre-gyp@0.12.0: Please upgrade to @mapbox/node-pre-gyp: the non-scoped node-pre-gyp package is
deprecated and only the @mapbox scoped package will receive updates in the future
npm WARN deprecated request@2.88.0: request has been deprecated, see https://github.com/request/request/issues/3142
npm WARN deprecated har-validator@5.1.5: this library is no longer supported
npm WARN deprecated bcrypt@3.0.8: versions < v5.0.0 do not handle NUL in passwords properly
npm WARN deprecated node-pre-gyp@0.14.0: Please upgrade to @mapbox/node-pre-gyp: the non-scoped node-pre-gyp package is
deprecated and only the @mapbox scoped package will receive updates in the future
C:\Users\[REDACTED]\AppData\Roaming\npm\node-red -> C:\Users\[REDACTED]\AppData\Roaming\npm\node_modules\node-red\red.js
C:\Users\[REDACTED]\AppData\Roaming\npm\node-red-pi -> C:\Users\[REDACTED]\AppData\Roaming\npm\node_modules\node-red\bin\node-red-pi
```

RUNNING AS A SERVICE

>> Once installed, you are ready to run Node-RED by executing the following syntax at command prompt or terminal:

→ Windows OS:

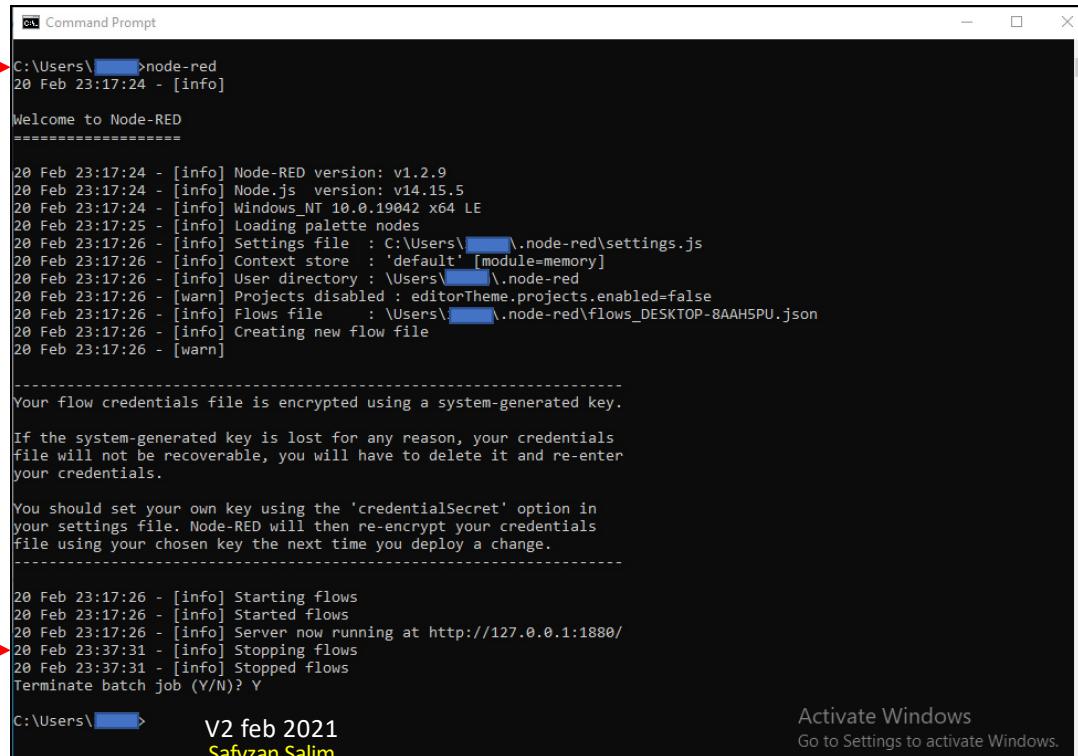
node-red

→ Other OS:

node-red-start

>> To **STOP** the service:

press CTRL C



```
C:\Users\[REDACTED] >node-red
20 Feb 23:17:24 - [info]
Welcome to Node-RED
=====
20 Feb 23:17:24 - [info] Node-RED version: v1.2.9
20 Feb 23:17:24 - [info] Node.js version: v14.15.5
20 Feb 23:17:24 - [info] Windows_NT 10.0.19042 x64 LE
20 Feb 23:17:25 - [info] Loading palette nodes
20 Feb 23:17:26 - [info] Settings file : C:\Users\[REDACTED]\.node-red\settings.js
20 Feb 23:17:26 - [info] Context store : 'default' [module=memory]
20 Feb 23:17:26 - [info] User directory : \Users\[REDACTED]\.node-red
20 Feb 23:17:26 - [warn] Projects disabled : editorTheme.projects.enabled=false
20 Feb 23:17:26 - [info] Flows file : \Users\[REDACTED]\.node-red\flows_DESKTOP-8AAHSPU.json
20 Feb 23:17:26 - [info] Creating new flow file
20 Feb 23:17:26 - [warn]

-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

20 Feb 23:17:26 - [info] Starting flows
20 Feb 23:17:26 - [info] Started flows
20 Feb 23:17:26 - [info] Server now running at http://127.0.0.1:1880/
20 Feb 23:37:31 - [info] Stopping flows
20 Feb 23:37:31 - [info] Stopped flows
Terminate batch job (Y/N)? Y

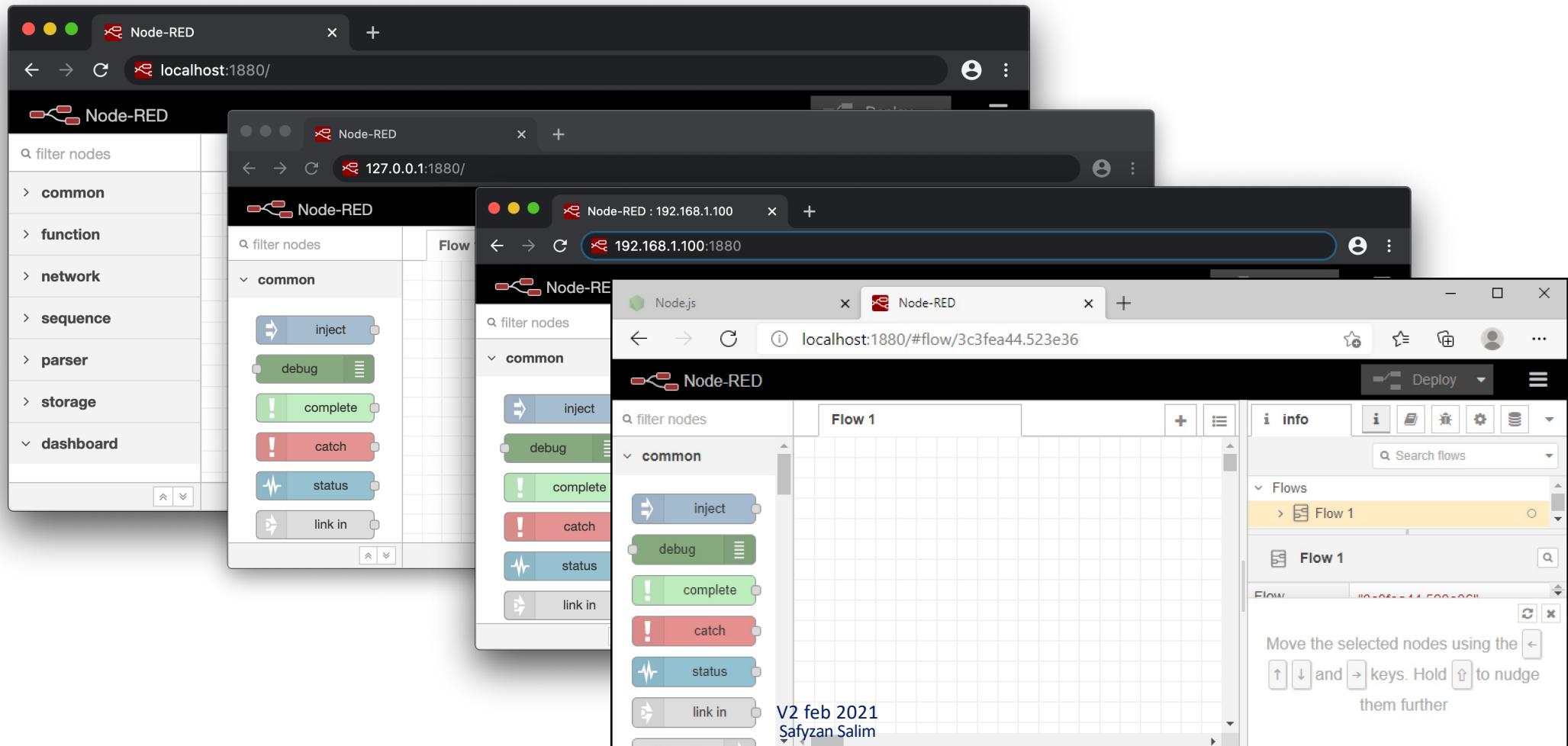
C:\Users\[REDACTED] > V2 feb 2021
Safyzan Salim
```

Activate Windows
Go to Settings to activate Windows.

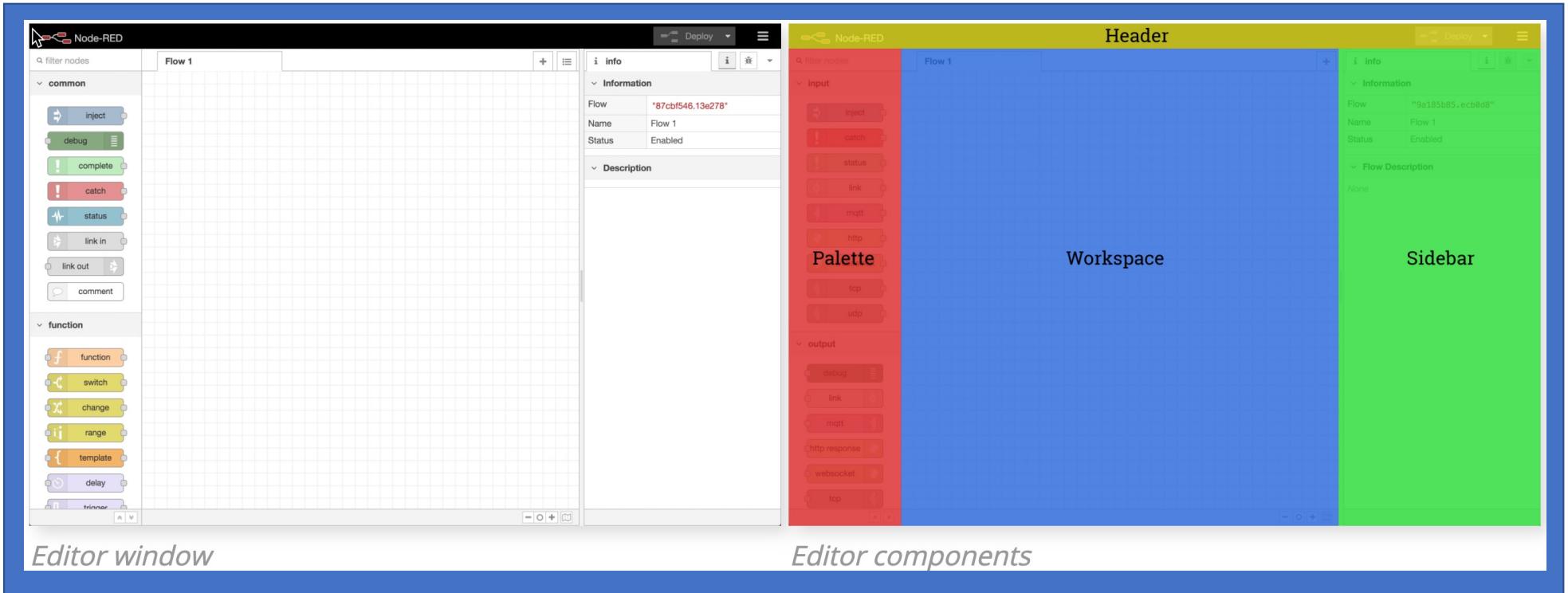
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OPENING THE EDITOR

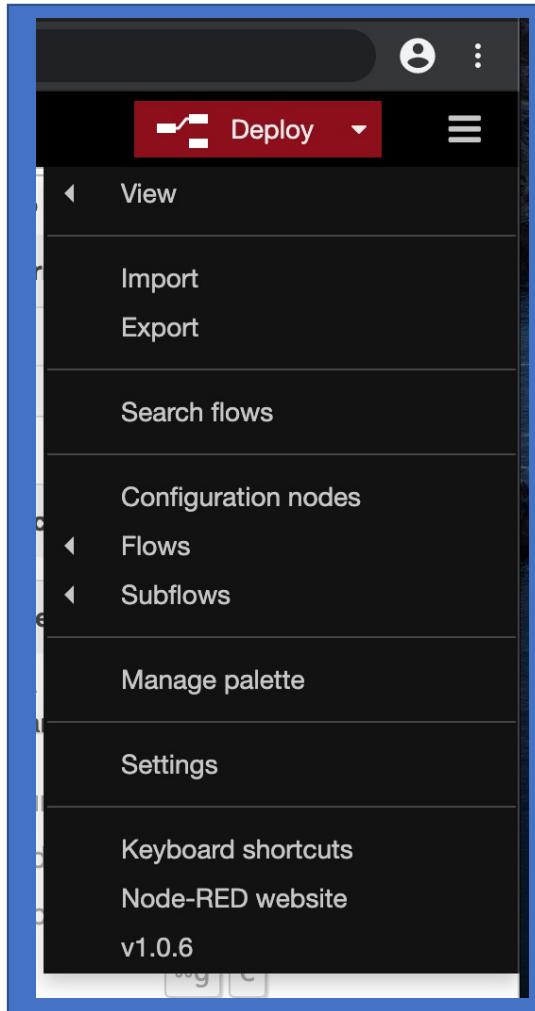
>> You can then access the Node-RED editor by pointing your browser at <http://localhost:1880>.



The editor components.

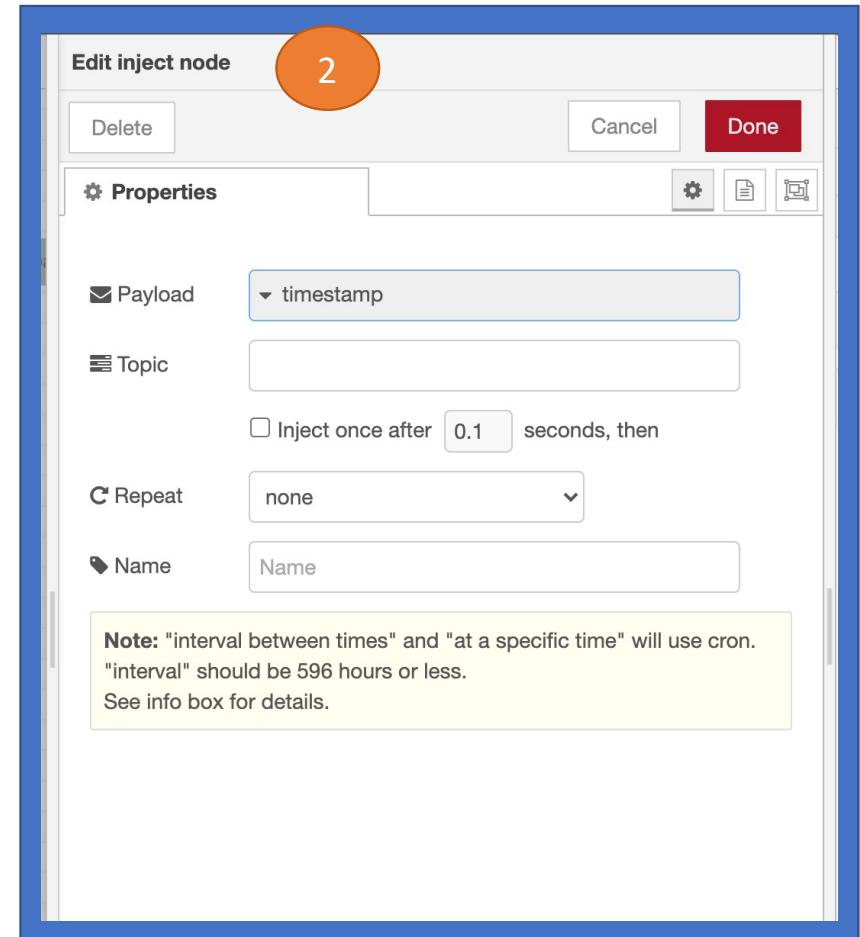
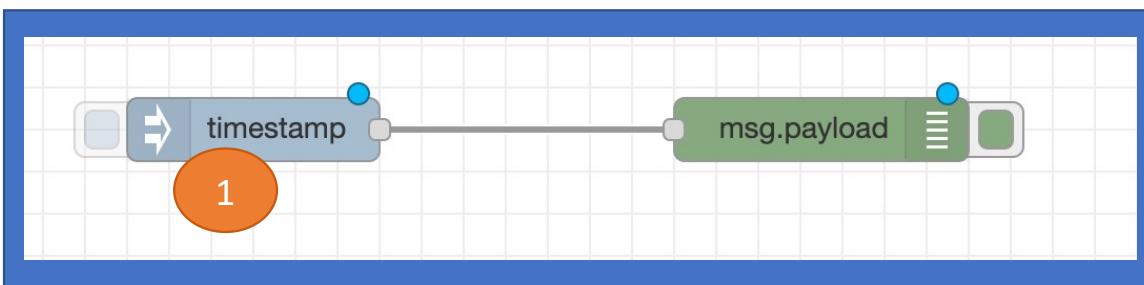


Node-RED: The Menu

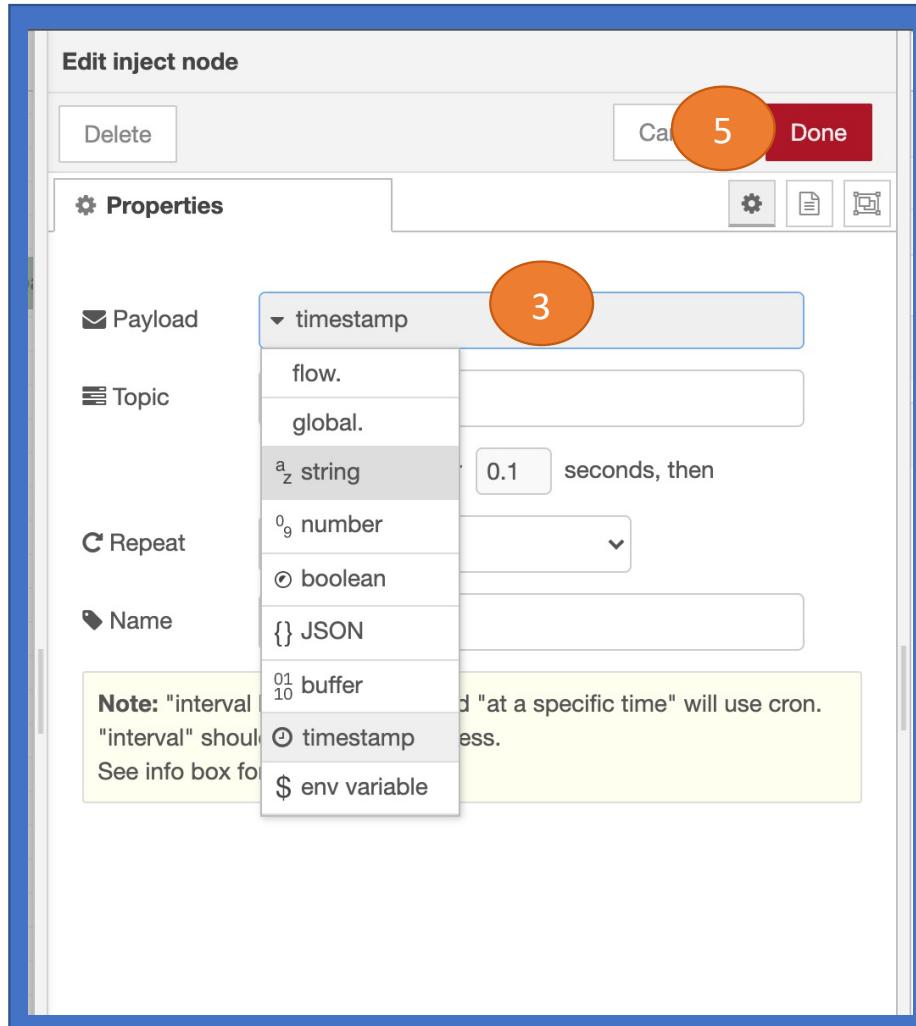


i. Display your name when the inject node is click.

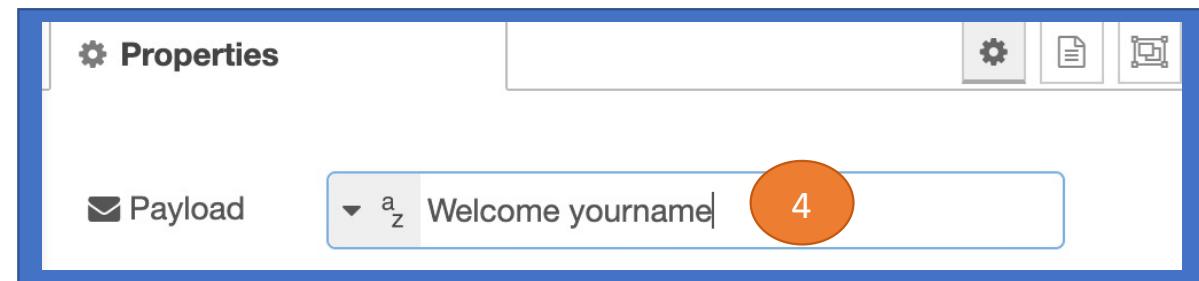
1. Place *Inject* node and *Debug* node into workspace.
2. Double click the *Inject* node to change the properties.



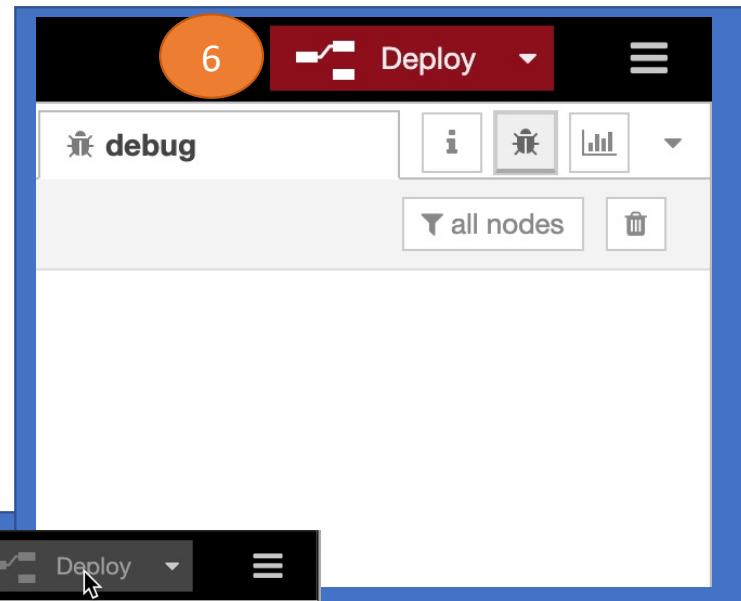
Node-RED: Exercise i



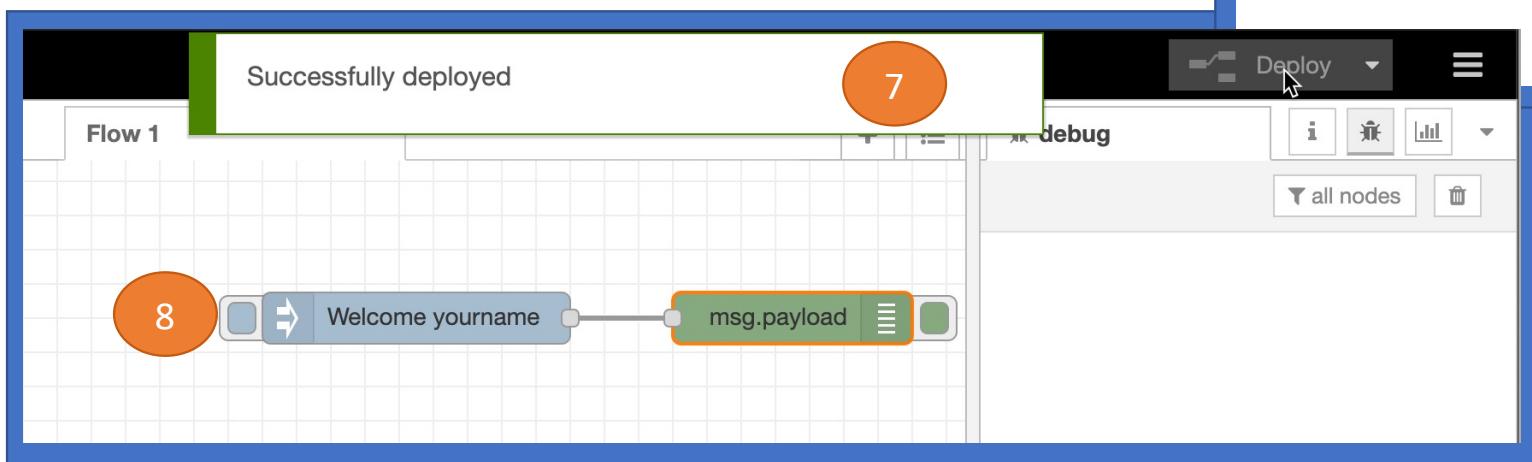
3. Click at the **Payload** dropdown box and choose *string*.
4. Type **Welcome 'yourname'**.
5. Click **Done**.



6. Click **Deploy** to update, save and enable execute. It becomes red when you make any changes.



7. Success message box appears right after click **Deploy**.

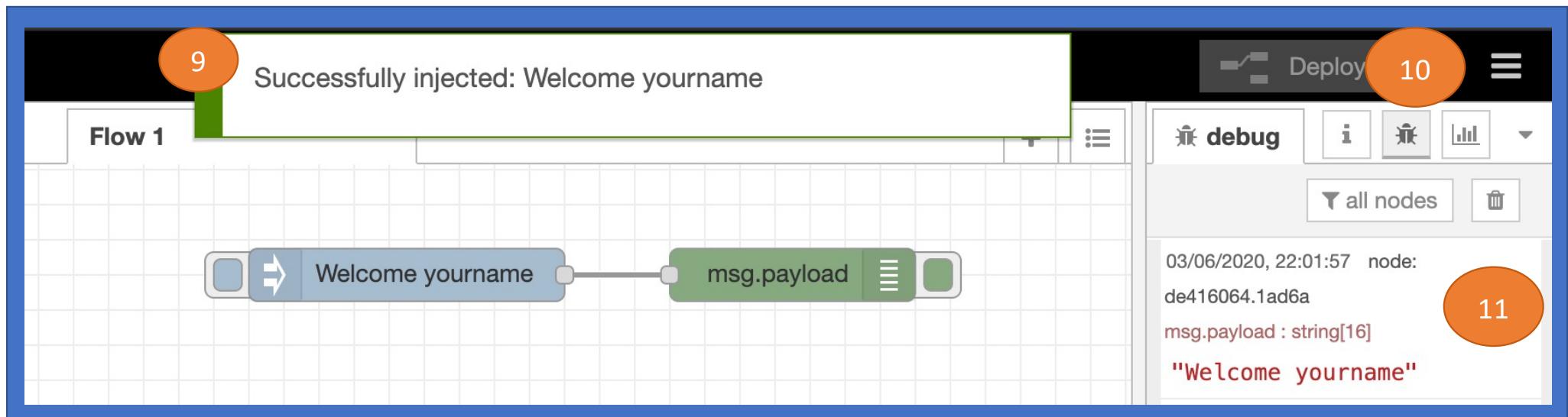


8. Click to small blue square to trigger the output.

9. A successful injected message will pop-up immediate you click inject node.

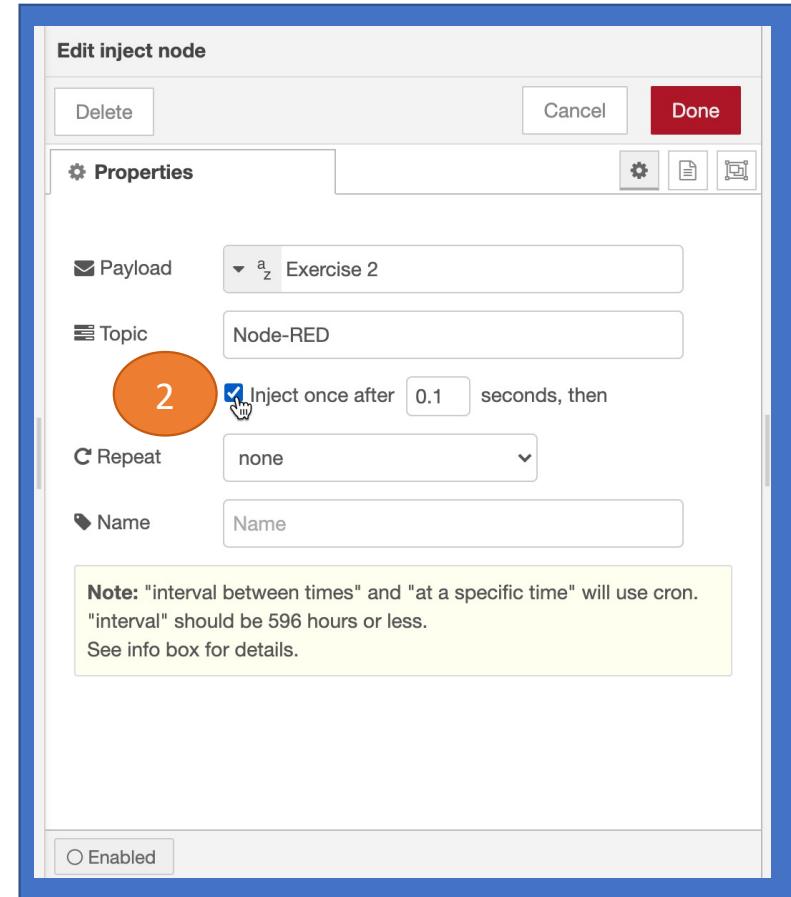
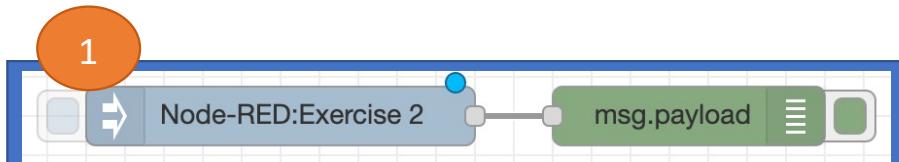
10. Click the bug icon to view the output via debug activity.

11. The output.



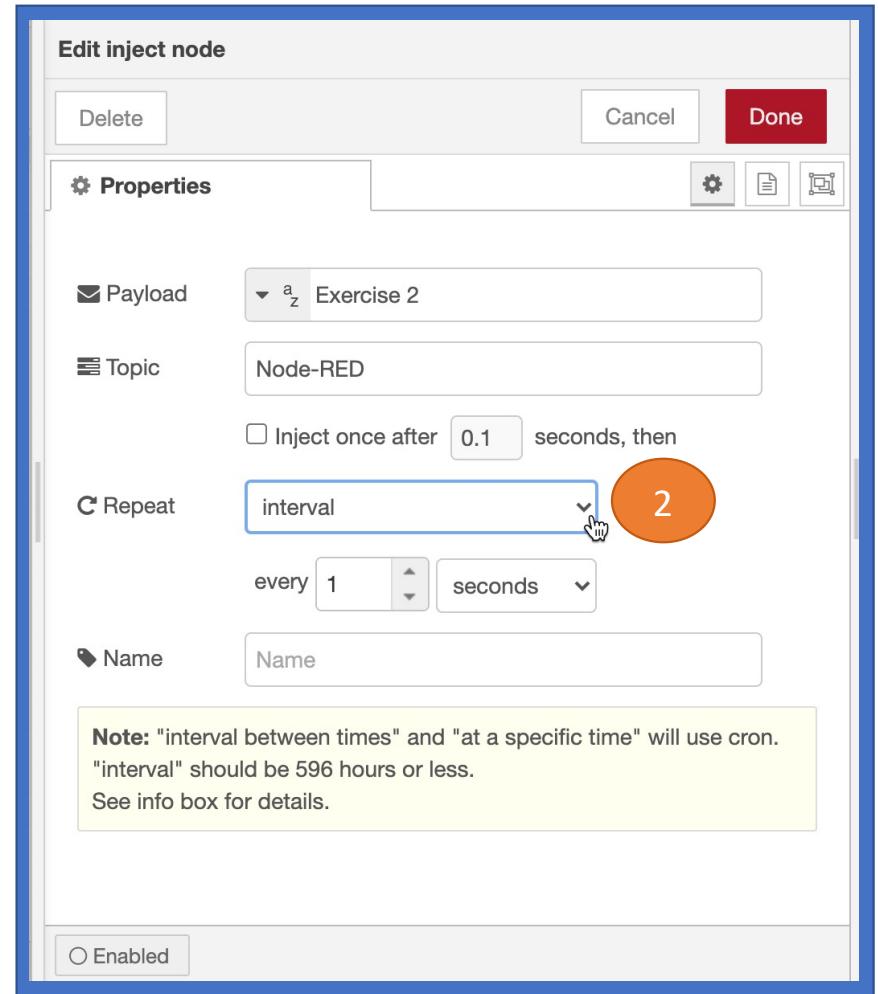
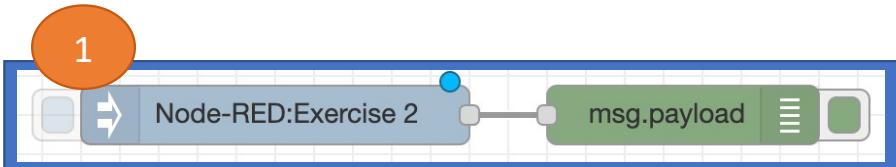
ii. Change inject mode

1. Set *Inject node* and *Debug node* as follows.
2. Click *Inject* once after 0.1 seconds, then...
3. Click *Done*.
4. Click *Deploy*.
5. Click *Debug* window.
6. Observe the output.



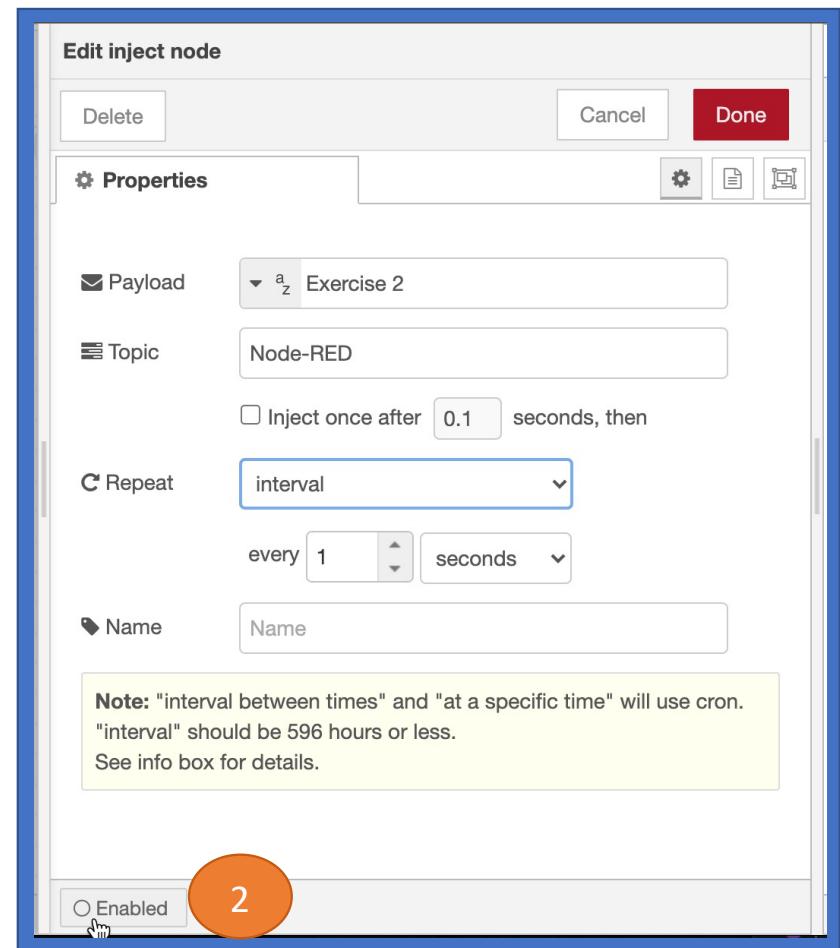
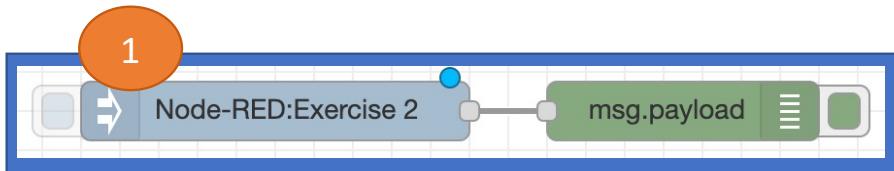
iii. Change inject mode

1. Set *Inject node* and *Debug node* as follows.
2. Set *Repeat > interval > every 1 > seconds*.
3. Click *Done*.
4. Click *Deploy*.
5. Click *Debug* window.
6. Observe the output.



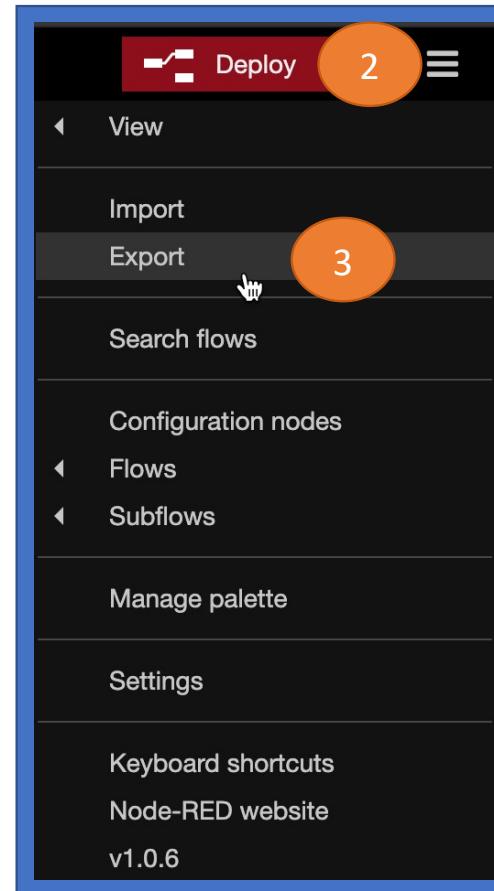
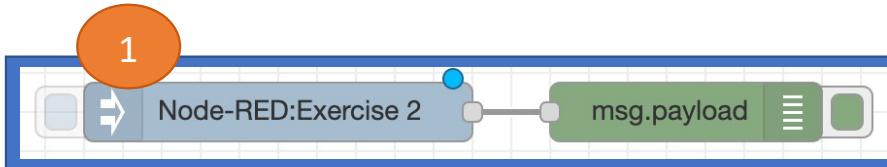
iv. Change inject mode

1. Set *Inject node* and *Debug node* as follows.
2. Click *Enabled* radio button.
3. Report the results.



v. Exporting your works

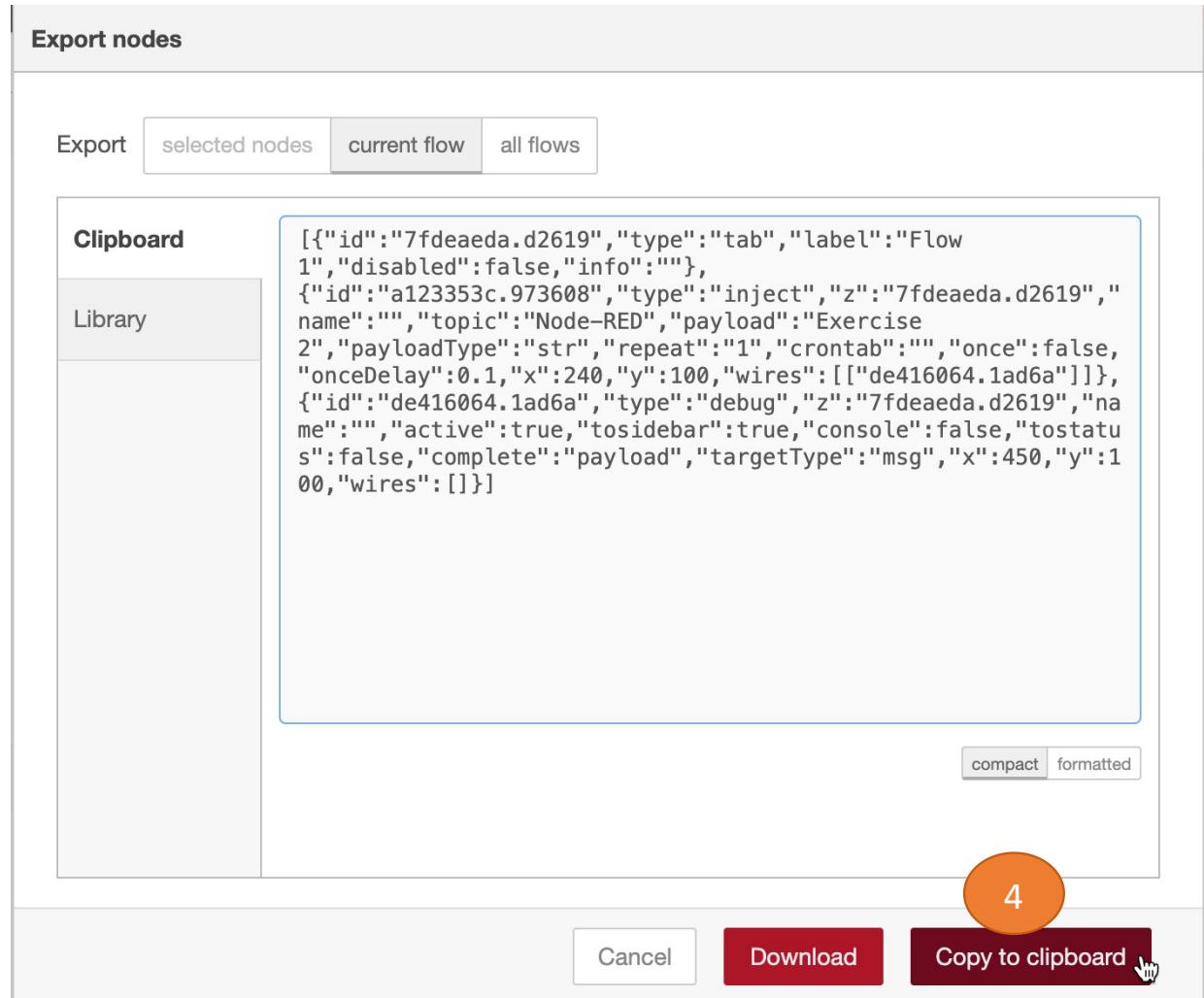
1. Set *Inject* node and *Debug* node as follows.
2. Click *Menu*.
3. Click *Export*.



v. Exporting your works

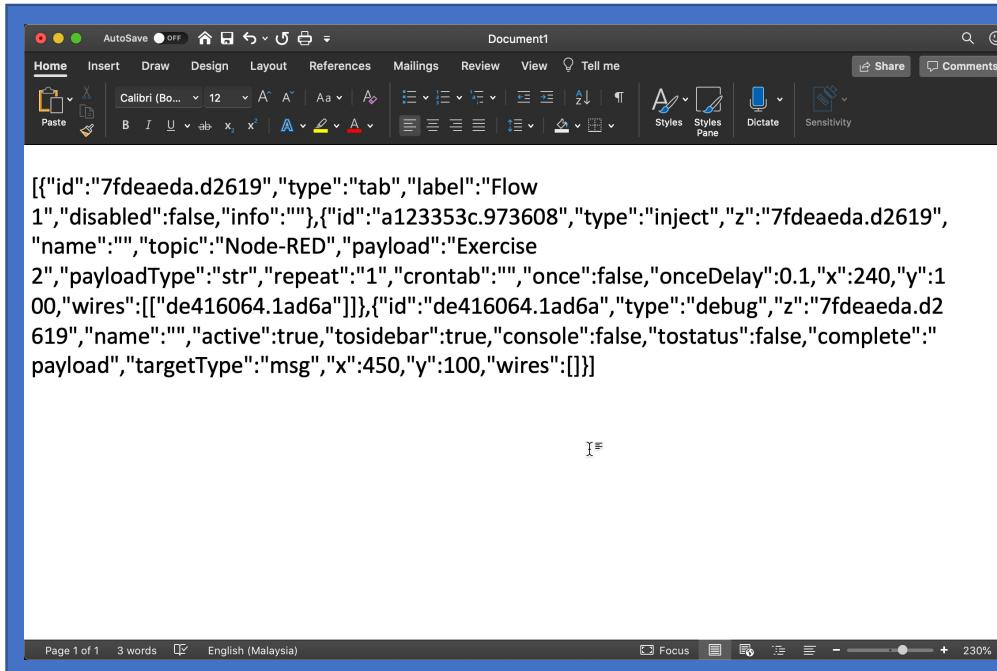
4. Click *Copy to clipboard*.

Click *Download* if you wish to download the nodes and it will be saved into your laptop/hard disk with the name of *flows.json*.



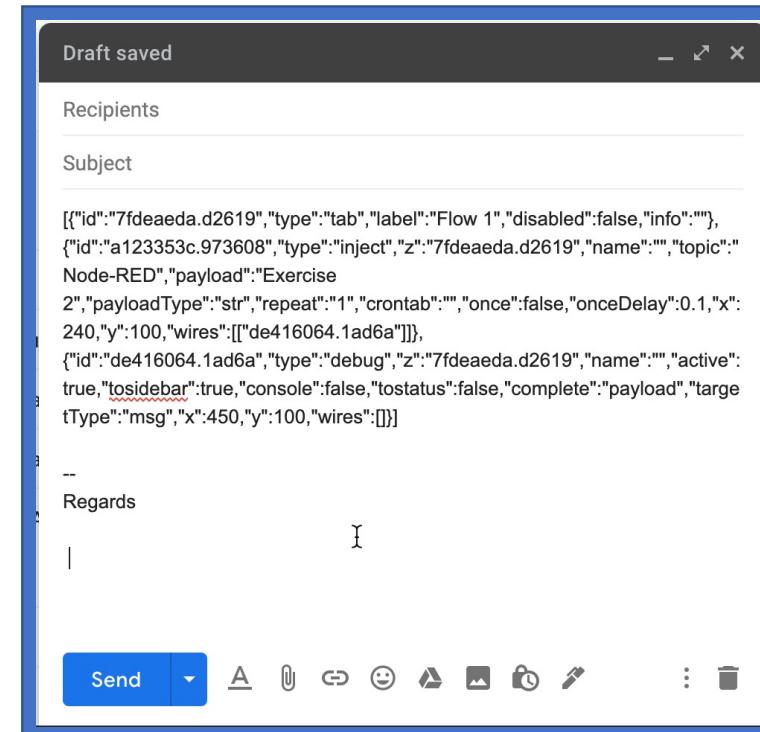
v. Exporting your works

6. Open any text editor, email and paste work.



A screenshot of a Microsoft Word document titled "Document1". The content of the document is a JSON object representing a Node-RED flow. The JSON is as follows:

```
[{"id": "7fdeaeda.d2619", "type": "tab", "label": "Flow 1", "disabled": false, "info": ""}, {"id": "a123353c.973608", "type": "inject", "z": "7fdeaeda.d2619", "name": "", "topic": "Node-RED", "payload": "Exercise", "payloadType": "str", "repeat": "1", "crontab": "", "once": false, "onceDelay": 0.1, "x": 240, "y": 100, "wires": [{"id": "de416064.1ad6a"}]}, {"id": "de416064.1ad6a", "type": "debug", "z": "7fdeaeda.d2619", "name": "", "active": true, "tosidebar": true, "console": false, "tostatus": false, "complete": "payload", "targetType": "msg", "x": 450, "y": 100, "wires": []}]
```



QUESTIONS

END