Lab 3 BITS 3533 Wireless Network and Mobile Computing Sem 1 2022/2023

Learning Outcome

At the end of this lab session, students are able to

- Run a simple programming using node-red
- Run modules inside termux.api pallete inside install android node-red

Required Tools

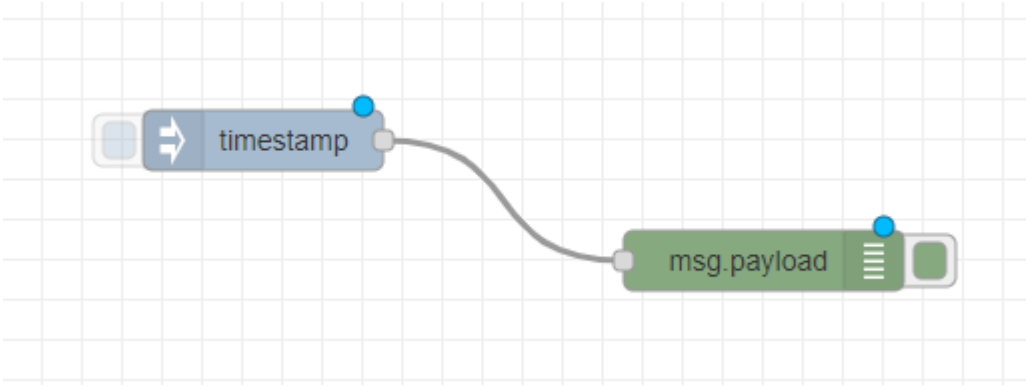
- Android Smartphone as Node-Red server
- PC/Desktop to access the Node-Red server
- Termux.API from Google Play Store

Task

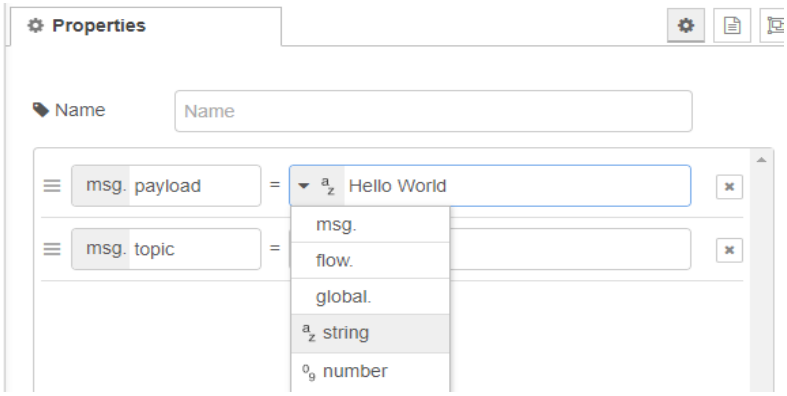
- Run Hello word in node-red
- Install Termux.api
- Run module inside Termux pallete

Task 1: Steps (Run Hello World)

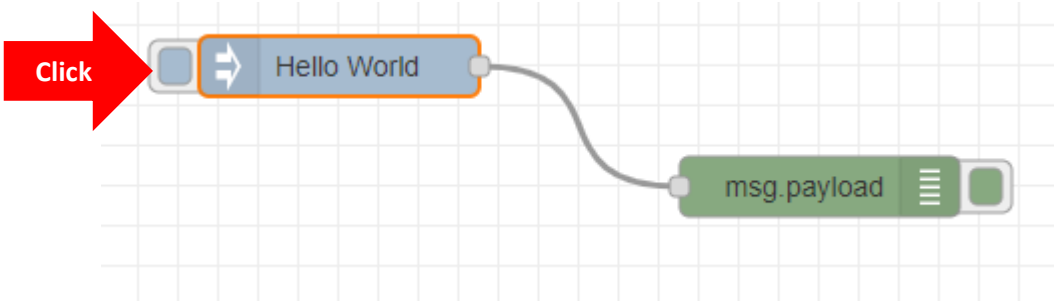
- Access installed node-red in your smartphone from another PC/laptop (use your experience from lab 2)
- Inside common pallete select “inject” and drop it into flow
- Then select “debug” and drop it into flow
- Then connect these two blocks with a line



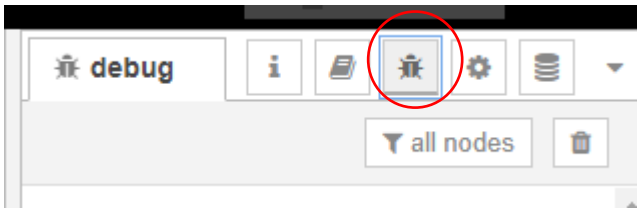
- Click timestamp and choose string and fill the box with word “Hello World”



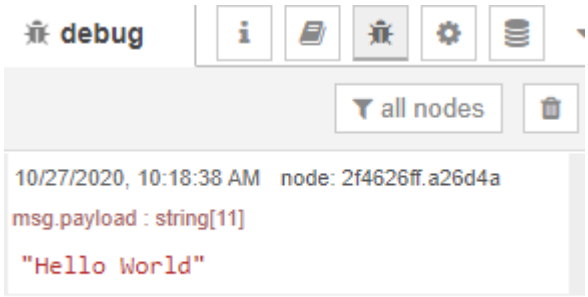
- Click Deploy and left box in timestamp



- Select debug message



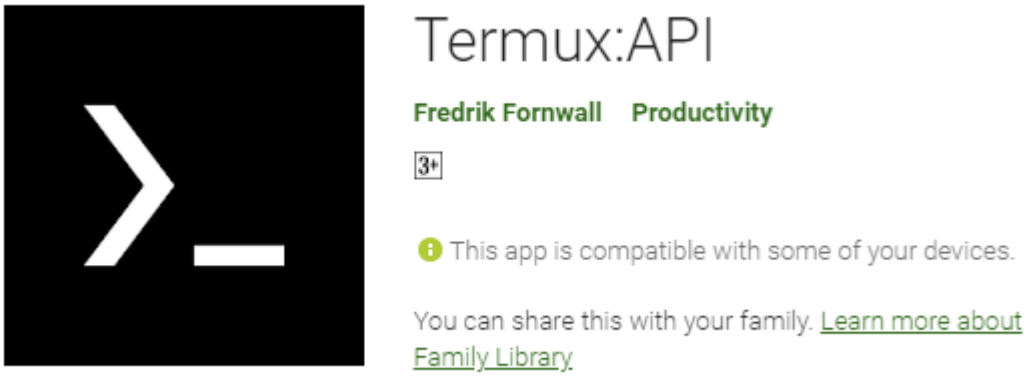
- You will see the your programming results



- You can also refer the following link.
http://developer.opto22.com/nodered/general/getting-started/node-red-hello-world/

Task 2: Installing termux-api package in smartphone

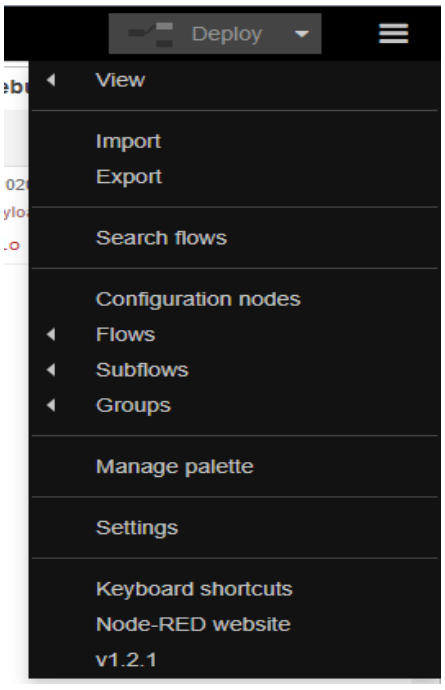
- Install Termux.app from Google Play Store.



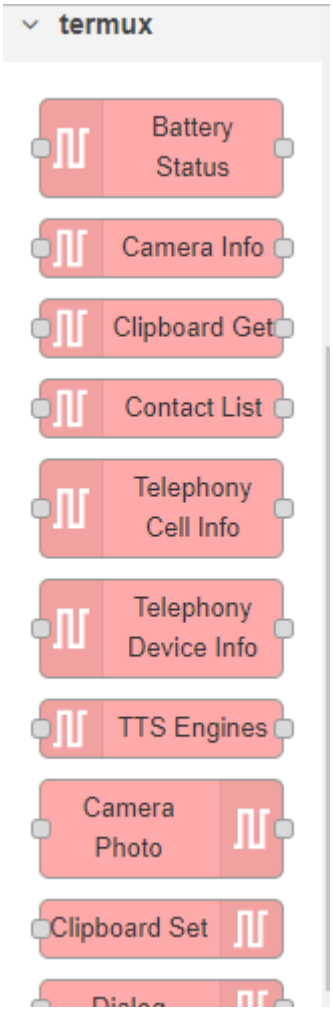
- Besides installing the Termux app, also install "Termux:API" app. This solves the hanging issue described below on Android 7.
- To use Termux:API you also need to install the termux-api package using the following command in Temux app.

```
pkg install termux-api
```

- Then, access the node-red from your laptop and search manage palette from button beside deploy

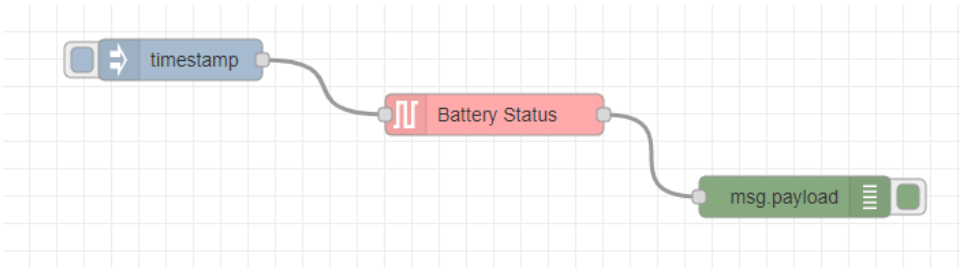


- Click manage palette and install “node-red-contrib-termux-api”
- After these steps you will see termux api pallete inside your node red

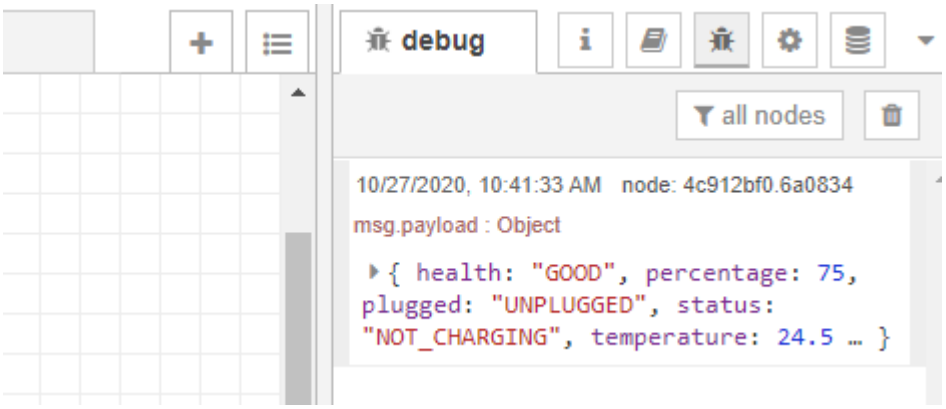


Task 3: Run modules in Temux

- Run the following block to find your smartphone battery status



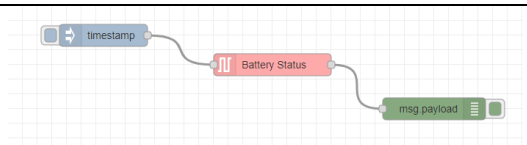
- You will get the smartphone battery status as shown in the figure.



Submission

Try to run the following modules:

1. Location, TTS Speak, Device Info, Wifi info and Wifi Scan.
2. Create the following table. List modules with their flows and results
3. Submit your work via ULearn

Modules	Flows	Result
Battery Status		health: "GOOD" percentage: 75 plugged: "UNPLUGGED" status: "NOT_CHARGING" temperature: 24.5 current: 141