

## Sprint-2

### Software (Create Device in the IoT Watson Platform, Workflow for IoT Scenarios Using Local Node Red)

Date	7 November 2022
Team ID	PNT2022TMID46943
Project Name	Smart Waste Management System For Metropolitan Cities.
Maximum Marks	20 Marks

### Create device in the IoT Watson Platform:

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area displays a table of devices. The first device, ID 12345, is an Arduino, disconnected, added on Nov 14, 2022 2:50 PM. Below the table, a detailed view of the selected device is shown, including its identity, device information, recent events, state, and logs. The device information section shows the Device ID (12345), Device Type (Arduino), Date Added (Nov 14, 2022 2:50 PM), Added By (821919104027@smartinternz.com), and Connection Status (Disconnected).

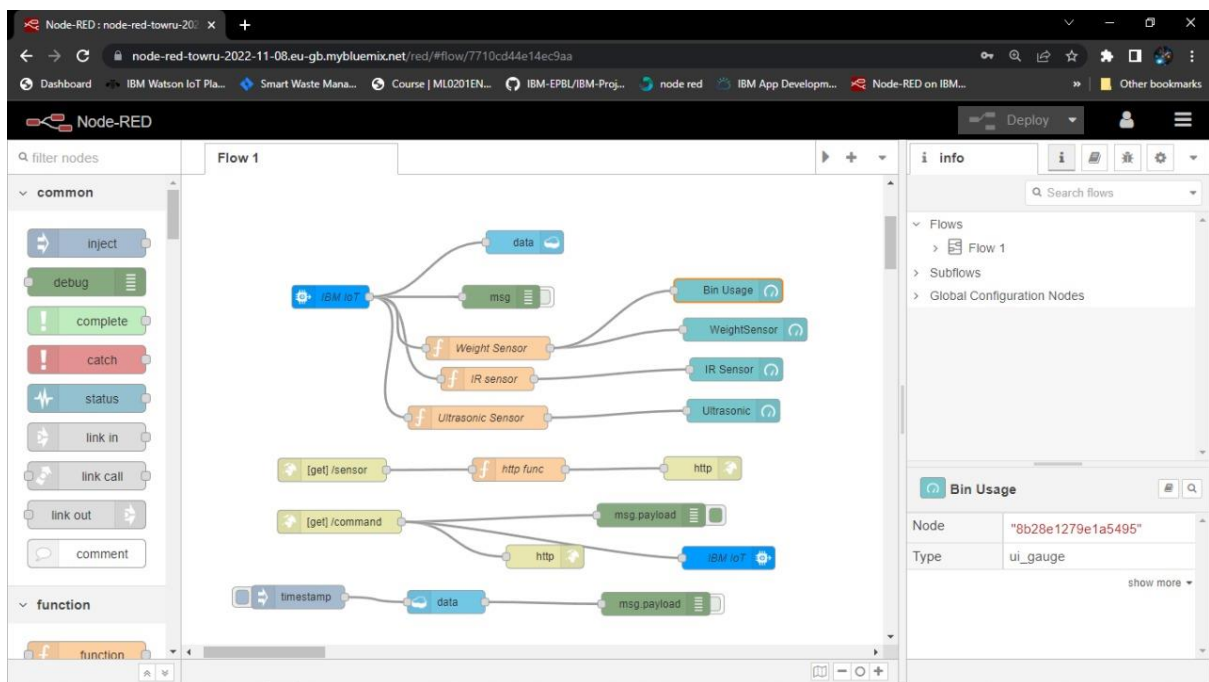
```
Python 3.7.9 Shell
File Edit Shell Debug Options Window Help
Python 3.7.9 (tags/v3.7.9:13c94747c7, Aug 17 2020, 18:58:18) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=====
2022-11-18 10:42:21,248 |bmiof.device.client |INFO |Connected successfully: dzuzeisg:Arduino:12345
Published Weight of Trashcan is = 73 C IR Sensor = 94 % Ultrasonic Sensor = 96 % to IBM Watson
Published Weight of Trashcan is = 3 C IR Sensor = 77 % Ultrasonic Sensor = 5 % to IBM Watson
Published Weight of Trashcan is = 48 C IR Sensor = 32 % Ultrasonic Sensor = 67 % to IBM Watson
Published Weight of Trashcan is = 66 C IR Sensor = 53 % Ultrasonic Sensor = 25 % to IBM Watson
Published Weight of Trashcan is = 53 C IR Sensor = 1 % Ultrasonic Sensor = 39 % to IBM Watson
Published Weight of Trashcan is = 42 C IR Sensor = 26 % Ultrasonic Sensor = 82 % to IBM Watson
Published Weight of Trashcan is = 22 C IR Sensor = 13 % Ultrasonic Sensor = 18 % to IBM Watson
Published Weight of Trashcan is = 90 C IR Sensor = 7 % Ultrasonic Sensor = 52 % to IBM Watson
Published Weight of Trashcan is = 37 C IR Sensor = 4 % Ultrasonic Sensor = 86 % to IBM Watson
Published Weight of Trashcan is = 18 C IR Sensor = 51 % Ultrasonic Sensor = 25 % to IBM Watson
Published Weight of Trashcan is = 39 C IR Sensor = 46 % Ultrasonic Sensor = 63 % to IBM Watson
Published Weight of Trashcan is = 83 C IR Sensor = 77 % Ultrasonic Sensor = 52 % to IBM Watson
Published Weight of Trashcan is = 96 C IR Sensor = 43 % Ultrasonic Sensor = 2 % to IBM Watson
Published Weight of Trashcan is = 13 C IR Sensor = 89 % Ultrasonic Sensor = 86 % to IBM Watson
Published Weight of Trashcan is = 28 C IR Sensor = 63 % Ultrasonic Sensor = 31 % to IBM Watson
|
```

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoTSensor	{"weight":51,"ir":78,"ultrasonic":81}	json	a few seconds ago
IoTSensor	{"weight":10,"ir":97,"ultrasonic":62}	json	a few seconds ago
IoTSensor	{"weight":4,"ir":50,"ultrasonic":64}	json	a few seconds ago
IoTSensor	{"weight":39,"ir":49,"ultrasonic":43}	json	a few seconds ago
IoTSensor	{"weight":59,"ir":77,"ultrasonic":35}	json	a few seconds ago

0 Simulations running

## Workflow in Node-Red:



## Flows.json:

```
[{"id":"7710cd44e14ec9aa","type":"tab","label":"Flow 1","disabled":false,"info":"","env":[]},{
  "id":"4cd271b8066ca370","type":"debug","z":"7710cd44e14ec9aa","name":"","active":false,"tosidebar":true,"console":false,"tostatus":false,"complete":"true","targetType":"full",
  "statusVal":"","statusType":"auto","x":467.85716247558594,"y":467.54058837890625,"wires":[]},
  {"id":"b10ec71e3e0b1bd9","type":"function"}
```

```
,"z":"7710cd44e14ec9aa","name":"IR
sensor","func":"msg.payload=msg.payload.ir\nglobal.set('i',msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[,"x":45
0.1427917480469,"y":573.3977699279785,"wires":[["a7f4a45c294f9fca"]]],
{"id":"8570ad1b36a4f5c8","type":"http
in","z":"7710cd44e14ec9aa","name":"","url":"/sensor","method":"get"
,"upload":false,"swaggerDoc":"","x":249.85714721679688,"y":690.68349
83825684,"wires":[["84733cc0deed38ac"]]],{"id":"0329f5053890cad8","ty
pe":"http
response","z":"7710cd44e14ec9aa","name":"","statusCode":"","headers
":{},"x":727.571460723877,"y":688.5406761169434,"wires":[[]],{"id":"847
33cc0deed38ac","type":"function","z":"7710cd44e14ec9aa","name":"htt
p func","func":"msg.payload={\\\"Weightsensor\\\":global.get(\\\"w\\\"),\\n\\\"IR
Sensor\\\":global.get(\\\"i\\\"),\\n\\\"Ultrasonic\\\":global.get(\\\"u\\\")\\n}\\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[,"x":49
0.57133865356445,"y":690.1120548248291,"wires":[["0329f5053890cad8"]
]],{"id":"162e73973a5cb9d6","type":"ibmiot
in","z":"7710cd44e14ec9aa","authentication":"apiKey","apiKey":"05f8f
b769a321474","inputType":"evt","logicalInterface":"","ruleId":"","devi
ceId":"12345","applicationId":"","deviceType":"Arduino","eventType"
:"+","commandType":"","format":"json","name":"IBM
IoT","service":"registered","allDevices":true,"allApplications":"","allDe
viceTypes":"","allLogicalInterfaces":"","allEvents":true,"allCommands
":"","allFormats":"","qos":0,"x":247.85716247558594,"y":467.54058837
890625,"wires":[["4cd271b8066ca370","b10ec71e3e0b1bd9","1b58bb62e0
4b5ad4","0dd05623eec038f6","3f591bae81ebe04b"]]],{"id":"a7f4a45c294f
9fca","type":"ui_gauge","z":"7710cd44e14ec9aa","name":"","group":"
ba852f1b82237623","order":13,"width":0,"height":0,"gtype":"gage","titl
e":"IR
Sensor","label":"units","format":"{{value}}","min":0,"max":"100","col
ors":["#00b500","#e6e600","#ca3838"],"seg1":"","seg2":"","className
":"","x":770.9171867370605,"y":561.0815753936768,"wires":[[]],{"id":"6
be1e20a037697cc","type":"ui_gauge","z":"7710cd44e14ec9aa","name":"
","group":"ba852f1b82237623","order":13,"width":0,"height":0,"gtype"
:"gage","title":"Ultrasonic","label":"units","format":"{{value}}","min":
0,"max":"100","colors":["#00b500","#e6e600","#ca3838"],"seg1":"","se
g2":"","className":"","x":767.1631355285645,"y":614.334415435791,"w
ires":[[]],{"id":"e2923f98667bfcd5","type":"ui_gauge","z":"7710cd44e14
ec9aa","name":"","group":"ba852f1b82237623","order":13,"width":0,"
height":0,"gtype":"gage","title":"WeightSensor","label":"units","forma
```

```
t":{"value":"","min":0,"max":100,"colors":["#00b500","#e6e600","#c
a3838"],"seg1":"","seg2":"","className":"","x":782.3415794372559,"y
":509.6915283203125,"wires":[]},{id:"0dd05623eec038f6","type":"func
tion","z":7710cd44e14ec9aa,"name":"Weight
Sensor","func":"msg.payload=msg.payload.weight\nnglobal.set('w',msg.pay
load)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":45
0.87744903564453,"y":533.6916160583496,"wires":[["e2923f98667bfcd5",
"8b28e1279e1a5495"]]},{"id":"1b58bb62e04b5ad4","type":"function","z
":7710cd44e14ec9aa,"name":"Ultrasonic
Sensor","func":"msg.payload=msg.payload.ultrasonic\nnglobal.set('u',msg.
payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":43
7.8774642944336,"y":623.2630214691162,"wires":[["6be1e20a037697cc"]
]},{"id":"886c69f23ec9d3db","type":"http
in","z":7710cd44e14ec9aa,"name":"","url":"/command","method":"g
et","upload":false,"swaggerDoc":"","x":259.28125762939453,"y":757.45
59841156006,"wires":[["9995aceae95fbc55","05e4716ec3ec01e6","e80f925
6084713ec"]]},{"id":"9995aceae95fbc55","type":"http
response","z":7710cd44e14ec9aa,"name":"","statusCode":"","headers
":{},"x":524.2897491455078,"y":802.4387722015381,"wires":[]},{id:"05
e4716ec3ec01e6","type":"debug","z":7710cd44e14ec9aa,"name":"","a
ctive":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"
payload","targetType":"msg","statusVal":"","statusType":"auto","x":6
61.2869567871094,"y":748.9559726715088,"wires":[]},{id:"e80f9256084
713ec","type":"ibmiot
out","z":7710cd44e14ec9aa,"authentication":"apiKey","apiKey":"05f8
fb769a321474","outputType":"evt","deviceId":"12345","deviceType":"
Arduino","eventCommandType":"command","format":"json","data":"
data","qos":0,"name":"IBM
IoT","service":"registered","x":761.0425834655762,"y":804.14633560180
66,"wires":[]},{id:"3f591bae81ebe04b","type":"cloudant
out","z":7710cd44e14ec9aa,"name":"","cloudant":"66d6d85e60353269
","database":"data","service":"ext","payonly":false,"operation":"insert
","x":498.203125,"y":397.111120223999,"wires":[]},{id:"56fcd5af218f3
fd1","type":"cloudant
in","z":7710cd44e14ec9aa,"name":"","cloudant":"66d6d85e60353269"
,"database":"data","service":"ext","search":"all","design":"","index":
":"","x":396.9424476623535,"y":860.8824291229248,"wires":[["f6effca51f4
0e342"]]},{"id":"f6effca51f40e342","type":"debug","z":7710cd44e14ec9
aa,"name":"","active":false,"tosidebar":true,"console":false,"tostatus":
```

```
false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":667.2869300842285,"y":863.3575706481934,"wires":[],{"id":"b678b4749f6eb20e","type":"inject","z":"7710cd44e14ec9aa","name":"","props":[{"p":"payload"}, {"p":"topic","vt":"str"}],"repeat":"","crontab":"","once":false,"onceDelay":0.1,"topic":"","payload":"","payloadType":"date","x":206.0475616455078,"y":854.6218299865723,"wires":[["56fcd5af218f3fd1"]]}, {"id":"8b28e1279e1a5495","type":"ui_gauge","z":"7710cd44e14ec9aa","name":"","group":"ba852f1b82237623","order":3,"width":0,"height":0,"gtype":"compass","title":"Bin Usage","label":"units","format":"{{value}}","min":0,"max":10,"colors":["#00b500","#e6e600","#ca3838"],"seg1":"","seg2":"","className":"","x":760.7030639648438,"y":459.401668548584,"wires":[], {"id":"05f8fb769a321474","type":"ibmiot","name":"","keepalive":"60","serverName":"","cleansession":true,"appId":"","shared":false}, {"id":"ba852f1b82237623","type":"ui_group","name":"Distance in CM","tab":"946edf8961ef4553","order":1,"disp":true,"width":"6","collapse":false,"className":""}, {"id":"66d6d85e60353269","type":"cloudant","host":"https://apikey-v2-2w6uenxvi1g6o15x6ca219whvjmlbxm6j9renbduh1sq:10044c6815de8a2baf30e74178e2d74e@fdf38dca-4290-48d1-bc09-6288f743ac4b-bluemix.cloudantnosqldb.appdomain.cloud","name":""}, {"id":"946edf8961ef4553","type":"ui_tab","name":"Cloud Data","icon":"dashboard","disabled":false,"hidden":false}]
```