

Project Development – Delivery of Sprint-2

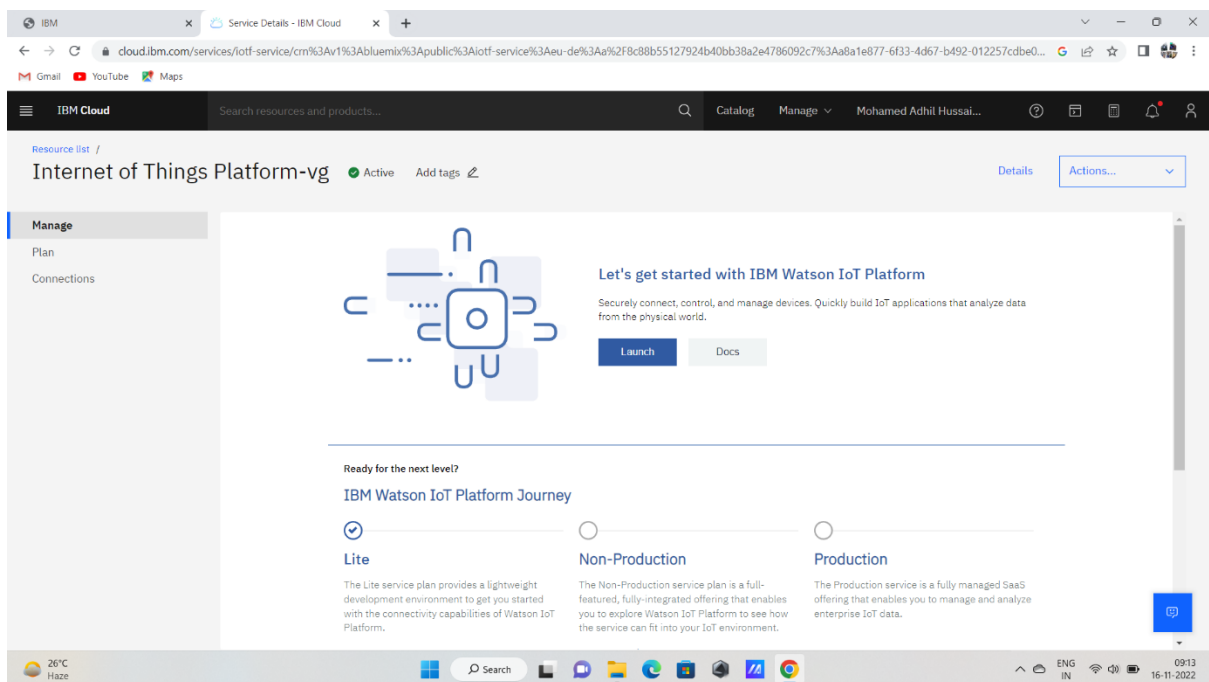
Team ID	PNT2022TMID47715
Project Name	Project - Smart Waste Management System For Metropolitan Cities

Create Device and Workflow of IoT Scenarios

Create device in the IoT Watson platform, workflow for IoT scenarios using local node red

IBM Watson IoT Platform:

In IBM Watson IoT Platform, There are four Devices where Created for four SmartBins and can be Executed and The Images are Shown Below,



This Device Were Connected to Wokwi for Simulation and Node-RED for workflow. The device which shows the data of the Garbage level and shows the Alert message of Garbage and Authorized Person can be Seen.

IBM Watson IoT Platform dashboard showing a list of devices. The interface includes a sidebar with navigation icons, a top navigation bar with tabs (Browse, Action, Device Types, Interfaces), and a main content area with a search bar and a table of devices. The table columns are Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. The status of all devices is 'Disconnected'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
1234	Disconnected	Assignment	Device	Nov 7, 2022 7:25 PM	
1234	Disconnected	raspberrypi	Device	Nov 3, 2022 8:17 PM	
12345	Disconnected	Bin2	Device	Nov 15, 2022 9:53 AM	
123456	Disconnected	123	Device	Nov 4, 2022 10:00 PM	
1234567	Disconnected	BIN4	Device	Nov 15, 2022 10:09 AM	
1234567	Disconnected	Bin3	Device	Nov 15, 2022 10:02 AM	

Items per page 50 | 1-6 of 6 items

IBM Watson IoT Platform dashboard showing a list of devices. The interface is similar to the first screenshot, but the status of the devices has changed. The status of devices 1234, 12345, 1234567, and 1234567 is now 'Connected', while 1234 and 123456 remains 'Disconnected'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
1234	Disconnected	Assignment	Device	Nov 7, 2022 7:25 PM	
1234	Connected	raspberrypi	Device	Nov 3, 2022 8:17 PM	
12345	Connected	Bin2	Device	Nov 15, 2022 9:53 AM	
123456	Disconnected	123	Device	Nov 4, 2022 10:00 PM	
1234567	Connected	BIN4	Device	Nov 15, 2022 10:09 AM	
1234567	Connected	Bin3	Device	Nov 15, 2022 10:02 AM	

Items per page 50 | 1-6 of 6 items

SmartBin 1

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area displays a list of devices. The selected device, 1234, is a 'raspberrypi' device, shown as 'Connected'. Below the device list, the 'Recent Events' tab is active, showing a table of events.

Event	Value	Format	Last Received
Data	{"GarbageLevel":17,"Location":"Chennai"}	json	a few seconds ago
Data	{"GarbageLevel":17,"Location":"Chennai"}	json	a few seconds ago
Data	{"GarbageLevel":17,"Location":"Chennai"}	json	a few seconds ago
Data	{"GarbageLevel":17,"Location":"Chennai"}	json	a few seconds ago
Data	{"GarbageLevel":17,"Location":"Chennai"}	json	a few seconds ago

SmartBin 2

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area displays a list of devices. The selected device, 12345, is a 'Bin2' device, shown as 'Connected'. Below the device list, the 'Recent Events' tab is active, showing a table of events.

Event	Value	Format	Last Received
Data	{"GarbageLevel":67,"Location":"madurai"}	json	a few seconds ago
Data	{"GarbageLevel":67,"Location":"madurai"}	json	a few seconds ago
Data	{"GarbageLevel":67,"Location":"madurai"}	json	a few seconds ago
Data	{"GarbageLevel":60,"Location":"madurai"}	json	a few seconds ago
Data	{"GarbageLevel":60,"Location":"madurai"}	json	a few seconds ago

SmartBin 3

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area displays details for device '1234567', which is 'Connected' and named 'Bin3'. The 'Recent Events' tab is active, showing a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are JSON payloads containing 'GarbageLevel' and 'Location' data. The bottom status bar shows the device is 'Connected' and the time is 'Nov 15, 2022 10:02 AM'.

Event	Value	Format	Last Received
Data	{"GarbageLevel":99,"Location":"Salem","ALERT!!"...	json	a few seconds ago
Data	{"GarbageLevel":99,"Location":"Salem","ALERT!!"...	json	a few seconds ago
Data	{"GarbageLevel":98,"Location":"Salem","ALERT!!"...	json	a few seconds ago
Data	{"GarbageLevel":98,"Location":"Salem","ALERT!!"...	json	a few seconds ago
Data	{"GarbageLevel":98,"Location":"Salem","ALERT!!"...	json	a few seconds ago

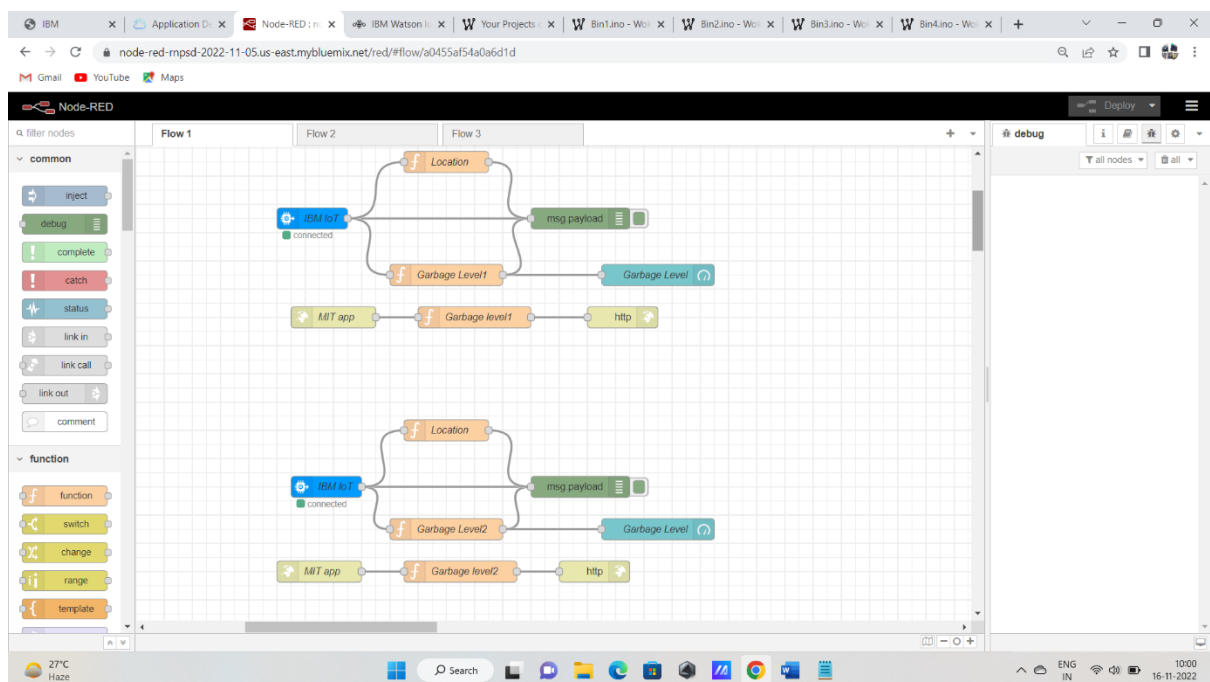
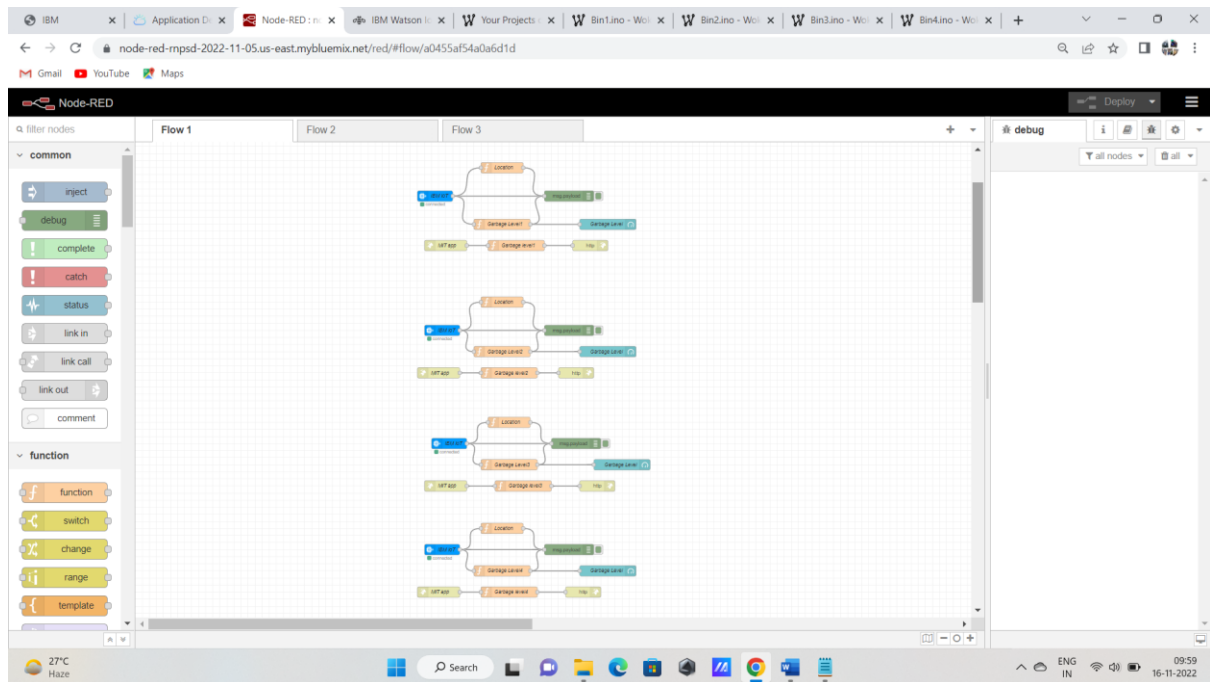
SmartBin 4

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area displays details for device '1234567', which is 'Connected' and named 'BIN4'. The 'Recent Events' tab is active, showing a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are JSON payloads containing 'GarbageLevel' and 'Location' data. The bottom status bar shows the device is 'Connected' and the time is 'Nov 15, 2022 10:09 AM'.

Event	Value	Format	Last Received
Data	{"GarbageLevel":86,"Location":"Trichy"}	json	a few seconds ago
Data	{"GarbageLevel":86,"Location":"Trichy"}	json	a few seconds ago
Data	{"GarbageLevel":78,"Location":"Trichy"}	json	a few seconds ago
Data	{"GarbageLevel":78,"Location":"Trichy"}	json	a few seconds ago
Data	{"GarbageLevel":78,"Location":"Trichy"}	json	a few seconds ago

Node-RED:

The Workflow of Smart waste Management System Can be Executed in Node-RED. Here There Lots of Nodes were connected such as IBM IoT, Garbage Level, Location and Garbage level Chart. These Nodes are connected to Device and Wokwi to Show the Garbage level and Alert Messages.



IBM Application IBM Watson Your Projects Bin1.ino - W Bin2.ino - W Bin3.ino - W Bin4.ino - W

node-red-mpsd-2022-11-05-us-east.mybluemix.net/red/#flow/a0455af54a0a6d1d

Node-RED

filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function
- switch
- change
- range
- template

Flow 1

Flow 2

Flow 3

debug

```
node-red-mpsd-2022-11-05-us-east.mybluemix.net/red/#flow/a0455af54a0a6d1d
```

11/16/2022, 10:03:47 AM node: e464723b27fa687
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : string[]
"Trichy"
Object
{ GarbageLevel: 78, Location: "madurai" }
11/16/2022, 10:03:47 AM node: e464723b27fa687
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : number
78
11/16/2022, 10:03:47 AM node: e464723b27fa687
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : string[]
"madurai"
11/16/2022, 10:03:47 AM node: 169b27961a95e1e7
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : Object
{ GarbageLevel: 8, Location: "Chennai" }
11/16/2022, 10:03:47 AM node: 169b27961a95e1e7
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : number
8
11/16/2022, 10:03:47 AM node: 169b27961a95e1e7
iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : string[]
"Chennai"

IBM Application IBM Watson Your Projects Bin1.ino - W Bin2.ino - W Bin3.ino - W Bin4.ino - W

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iot-2type/Bin2Id/1234567890Data/rtmpson : msg.payload : string[]
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