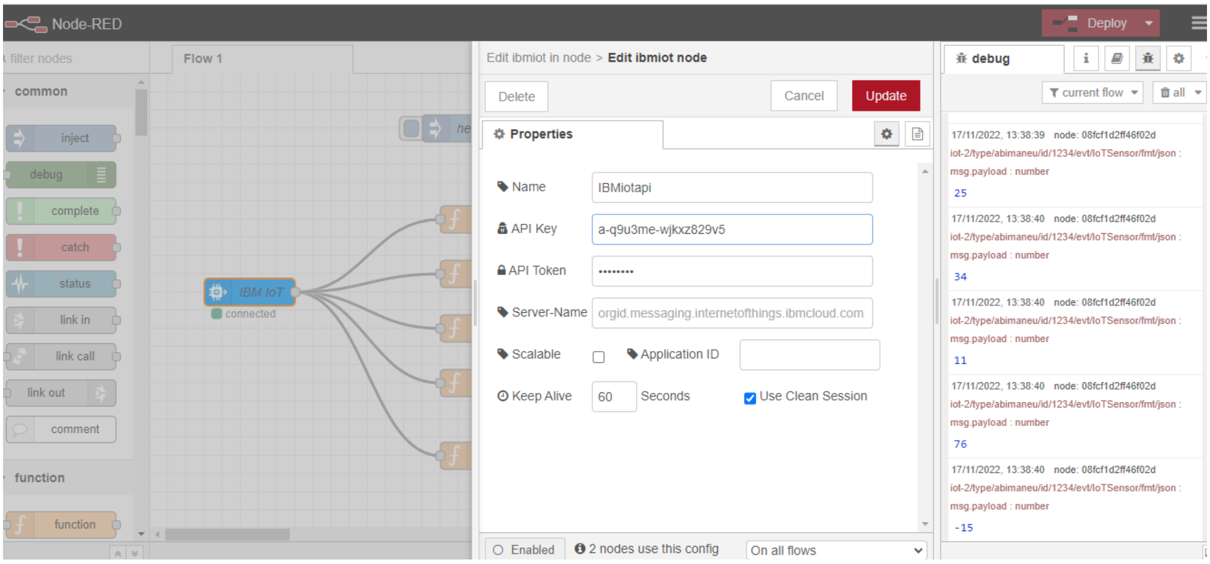
SPRINT 3

Team ID	PNT2022TMID46724
Project Title	SmartFarmer - IoT Enabled Smart Farming Application

Configuration of Node-Red to send commands to IBM cloud:

IBM IoT out node I used to send data from Node-Red to IBM Watson device. So, after adding it to the flow we need to configure it with credentials of our Watson device.



Edit ibmiot in node > Edit ibmiot node

Name: IBMiotapi

API Key: a-q9u3me-wjkxz829v5

API Token: ••••••••

Server-Name: orgid.messaging.internetofthings.ibmcloud.com

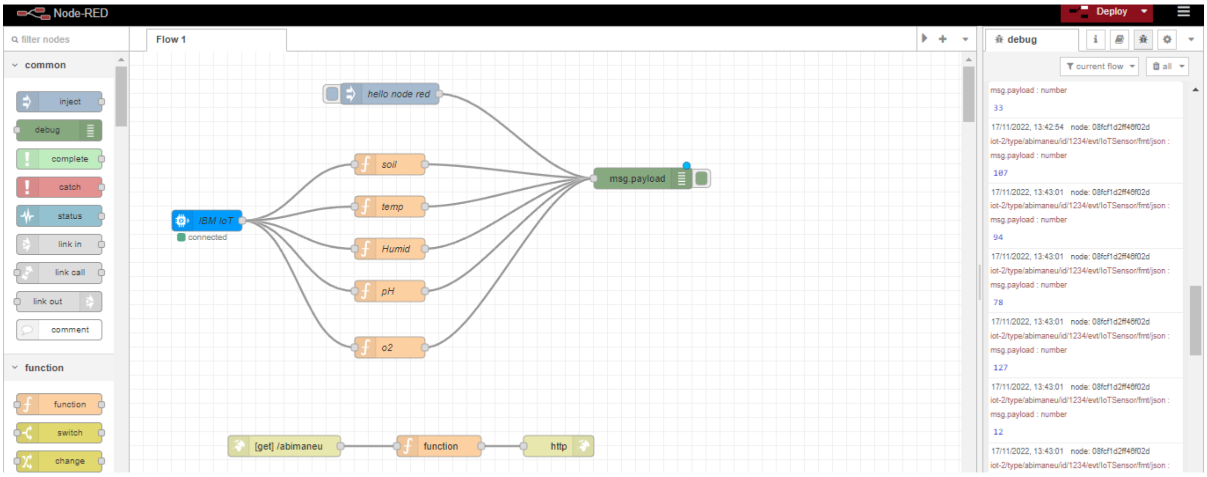
Scalable: □ Application ID:

Keep Alive: 60 Seconds ☑ Use Clean Session

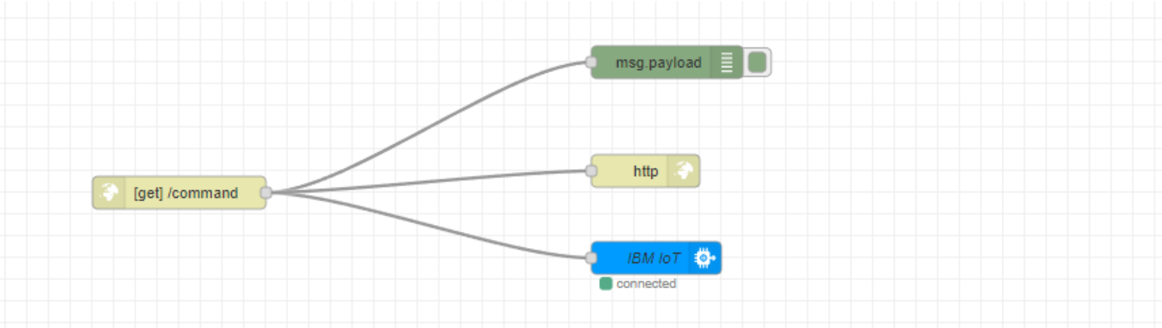
○ Enabled 2 nodes use this config On all flows

```
17/11/2022, 13:38:39   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
25
17/11/2022, 13:38:40   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
34
17/11/2022, 13:38:40   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
11
17/11/2022, 13:38:40   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
76
17/11/2022, 13:38:40   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
-15
```

Complete Program Flow:



```
msg.payload : number
33
17/11/2022, 13:42:54   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
107
17/11/2022, 13:43:01   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
94
17/11/2022, 13:43:01   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
78
17/11/2022, 13:43:01   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
127
17/11/2022, 13:43:01   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
12
17/11/2022, 13:43:01   node: 08fcf1d2ff46f02d
iot-2/type/abimaneu/id/1234/evt/IoTSensor/fmt/json :
```

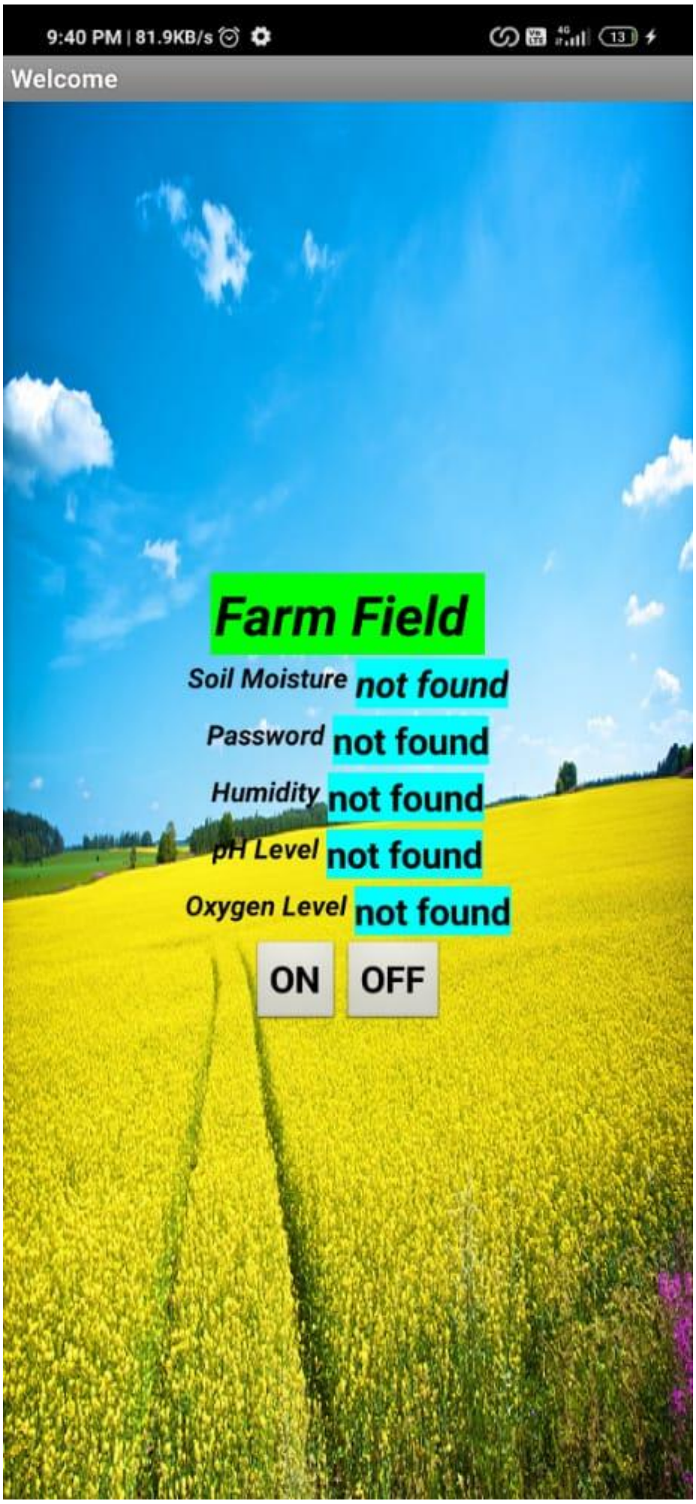


Complete Flow .JSON:

[{"id":"913ec97a666fe2b8","type":"tab","label":"Flow
1","disabled":false,"info":"","env":[]},{"id":"08fcf1d2ff46f02d","type":"debug","z":"913ec
97a666fe2b8","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,
"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":730,"y
":180,"wires":[]},{"id":"5402929fa902394d","type":"function","z":"913ec97a666fe2b8","
name":"temp","func":"msg.payload =
msg.payload.temp\nglobal.set(\"t\",msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":370,"y":220,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"bddcf52b01358aa3","type":"function","z":"913ec97a666fe2
b8","name":"soil","func":"msg.payload =
msg.payload.soil\nglobal.set(\"s\",msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":370,"y":160,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"e942a978849643ce","type":"function","z":"913ec97a666fe2
b8","name":"Humid","func":"msg.payload =
msg.payload.Humid\nglobal.set(\"h\",msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":370,"y":280,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"8bbfaa47161f5be5","type":"ibmiot
in","z":"913ec97a666fe2b8","authentication":"apiKey","apiKey":"f52b214740417119",
"inputType":"evt","logicalInterface":"","ruleId":"","deviceId":"1234","applicationId":"","d
eviceType":"+","eventType":"+","commandType":"","format":"json","name":"IBM
IoT","service":"registered","allDevices":"","allApplications":"","allDeviceTypes":true,"al
lLogicalInterfaces":"","allEvents":true,"allCommands":"","allFormats":true,"qos":0,"x":
110,"y":240,"wires":[["e942a978849643ce","bddcf52b01358aa3","071090b1b7f9201
7","4c4fc92950817c18","5402929fa902394d"]]},{"id":"d127d499a19f7181","type":"inj
ect","z":"913ec97a666fe2b8","name":"hello node
red","props":[{"p":"payload"},{"p":"topic","vt":"str"}],"repeat":"","crontab":"","once":false

,"onceDelay":0.1,"topic":"","payload":"","payloadType":"date","x":370,"y":60,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"071090b1b7f92017","type":"function","z":"913ec97a666fe2
b8","name":"pH","func":"msg.payload =
msg.payload.pH\nglobal.set(\"p\",msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":370,"y":340,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"4c4fc92950817c18","type":"function","z":"913ec97a666fe2
b8","name":"o2","func":"msg.payload =
msg.payload.o2\nglobal.set(\"o\",msg.payload)\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":370,"y":420,"wires":[["
08fcf1d2ff46f02d"]]},{"id":"92877237131cd07f","type":"http
in","z":"913ec97a666fe2b8","name":"","url":"/abimaneu","method":"get","upload":false
,"swaggerDoc":"","x":220,"y":560,"wires":[["890dcabbb92dfb47"]]},{"id":"b0c6848abee
7e42c","type":"http
response","z":"913ec97a666fe2b8","name":"","statusCode":"","headers":{},"x":610,"y"
:560,"wires":[]},{"id":"890dcabbb92dfb47","type":"function","z":"913ec97a666fe2b8","
name":"","func":"msg.payload={\"soil\":global.get('`s'),\"temp\":global.get('t'),\"Humid\"
:global.get('h'),\"pH\":global.get('p'),\"o2\":global.get('o'),}\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":440,"y":560,"wires":[["
b0c6848abee7e42c"]]},{"id":"5b1326b20a716622","type":"http
in","z":"913ec97a666fe2b8","name":"","url":"/command","method":"get","upload":false
,"swaggerDoc":"","x":200,"y":800,"wires":[["efd8d956c7964cc6","8d739ebc50ba3db5"
,"08fcf1d2ff46f02d"]]},{"id":"8d739ebc50ba3db5","type":"http
response","z":"913ec97a666fe2b8","name":"","statusCode":"","headers":{},"x":630,"y"
:780,"wires":[]},{"id":"efd8d956c7964cc6","type":"ibmiot
out","z":"913ec97a666fe2b8","authentication":"apiKey","apiKey":"f52b214740417119
","outputType":"evt","deviceId":"1234","deviceType":"abimaneu","eventCommandTyp
e":"command","format":"json","data":"data","qos":0,"name":"IBM
IoT","service":"registered","x":640,"y":860,"wires":[]},{"id":"f52b214740417119","type"
:"ibmiot","name":"IBMiotapi","keepalive":"60","serverName":"","cleansession":true,"ap
pId":"","shared":false}]

Mobile App Using MIT App Inverter:



Welcome

Farm Field

Soil Moisture not found

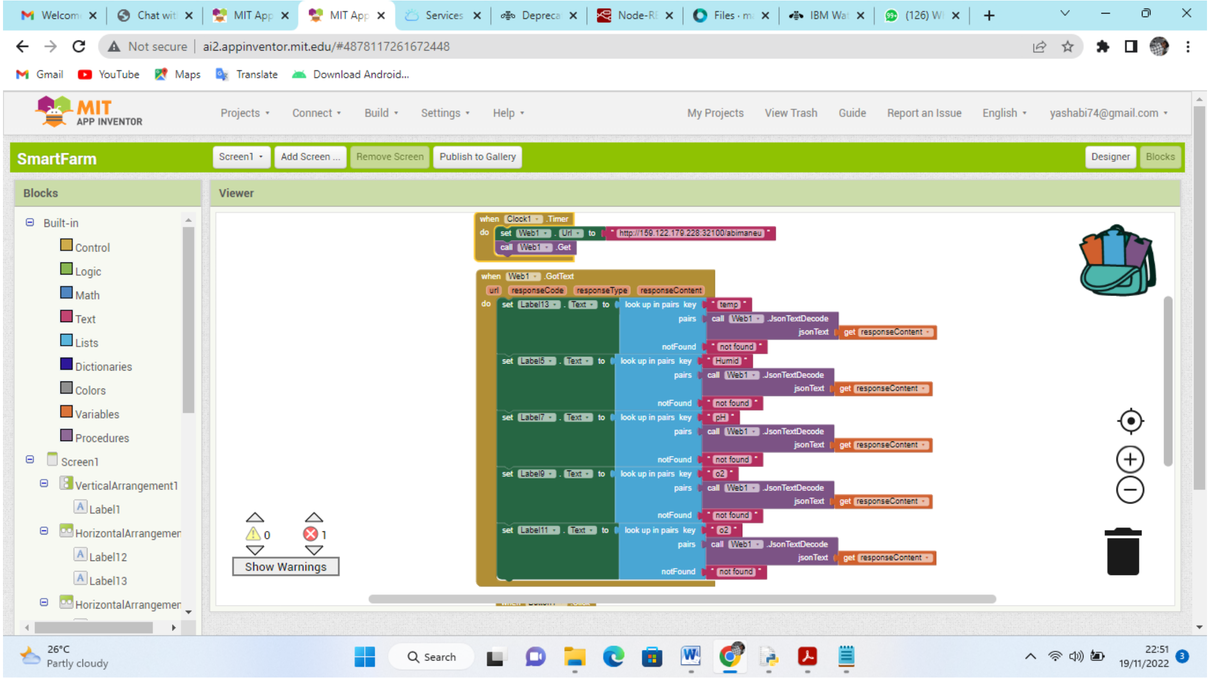
Password not found

Humidity not found

pH Level not found

Oxygen Level not found

MIT App Inverter Code Blocks:



```
when Clock1 .Timer
do  set Web1 . Url to "http://159.122.179.228:32100/abimaneu"
    call Web1 .Get

when Web1 .GotText
 url  responseCode  responseType  responseContent
do  set Label13 . Text to  look up in pairs  key "temp"
                                             pairs  call Web1 .JsonTextDecode
                                                         jsonText  get responseContent
                                          notFound "not found"
    set Label5 . Text to  look up in pairs  key "Humid"
                                            pairs  call Web1 .JsonTextDecode
                                                        jsonText  get responseContent
                                         notFound "not found"
    set Label7 . Text to  look up in pairs  key "pH"
                                            pairs  call Web1 .JsonTextDecode
                                                        jsonText  get responseContent
                                         notFound "not found"
    set Label9 . Text to  look up in pairs  key "o2"
                                            pairs  call Web1 .JsonTextDecode
                                                        jsonText  get responseContent
                                         notFound "not found"
    set Label11 . Text to  look up in pairs  key "o2"
                                             pairs  call Web1 .JsonTextDecode
                                                         jsonText  get responseContent
                                          notFound "not found"
```