Assignment 4

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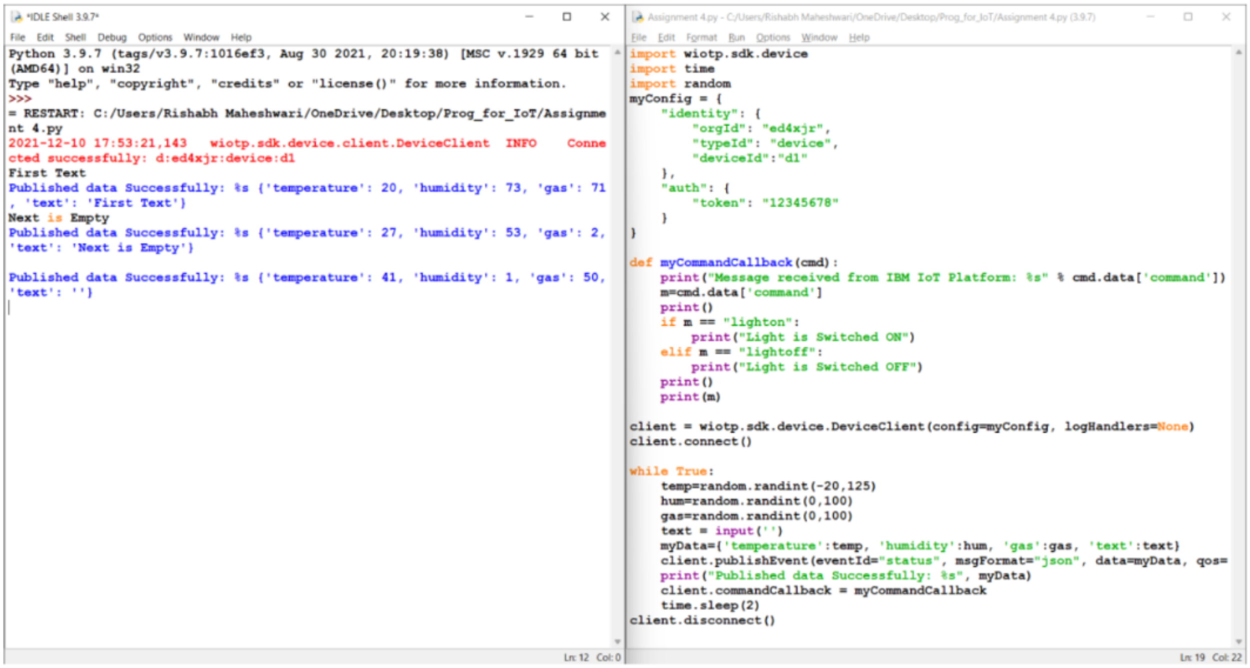
Develop a mobile application that takes the user input and sends it to an IoT device (python code). print the received data in python shell. Keep a text box to accept the user input. Integrate a submit button. Whenever a user enters the text input in the text box and clicks the button the data should be sent to the IBM cloud using URL(HTTP API).

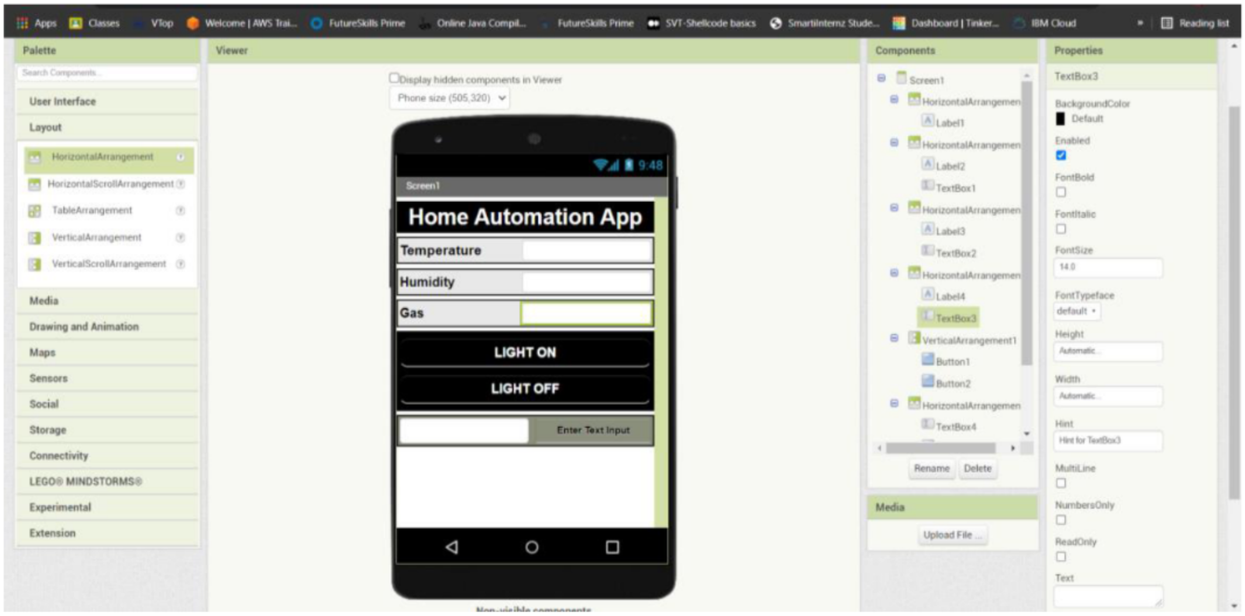
Python code:


IDLE Shell 3.9.7
File Edit Shell Debug Options Window Help
Ln: 12 Col: 0
Assignment 4.py - C:/Users/Rishabh Maheshwari/OneDrive/Desktop/Prog_for_IoT/Assignment 4.py (3.9.7)
File Edit Format Run Options Window Help
Ln: 19 Col: 22

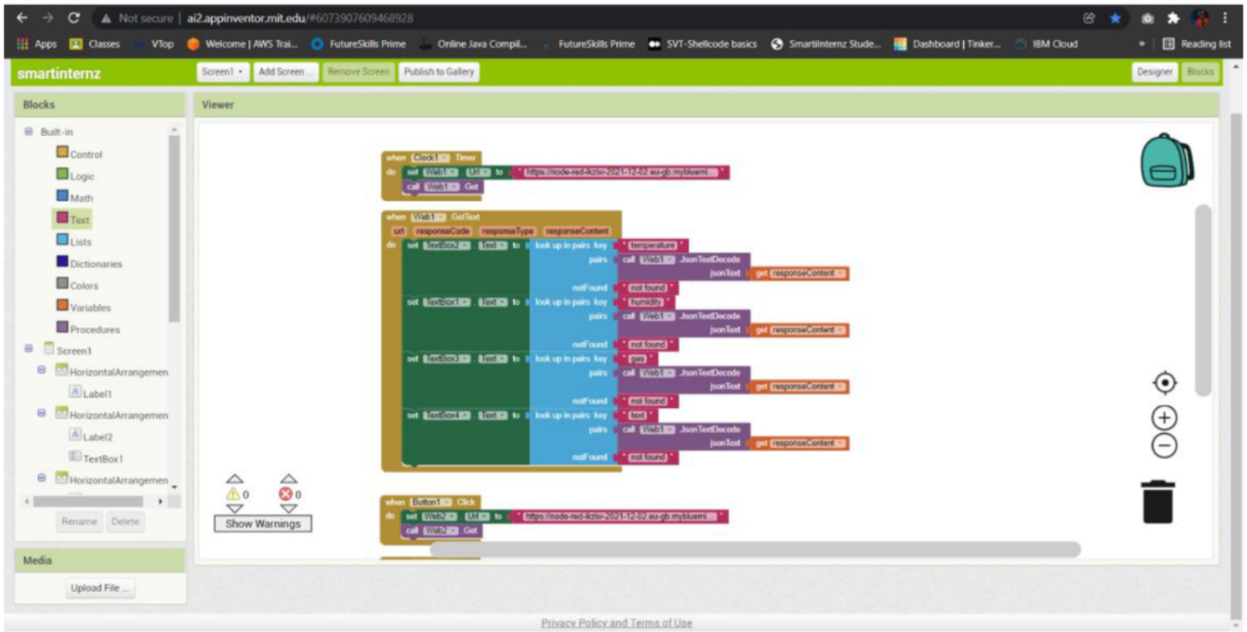
```
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Rishabh Maheshwari/OneDrive/Desktop/Prog_for_IoT/Assignme
nt 4.py
2021-12-10 17:53:21,143   wiotp.sdk.device.client.DeviceClient  INFO    Conne
cted successfully: d:ed4xjr:device:d1
First Text
Published data Successfully: %s {'temperature': 20, 'humidity': 73, 'gas': 71
, 'text': 'First Text'}
Next is Empty
Published data Successfully: %s {'temperature': 27, 'humidity': 53, 'gas': 2,
'text': 'Next is Empty'}

Published data Successfully: %s {'temperature': 41, 'humidity': 1, 'gas': 50,
'text': ''}
```

```python
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "ed4xjr",
        "typeId": "device",
        "deviceId":"d1"
    },
    "auth": {
        "token": "12345678"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
    print()
    if m == "lighton":
        print("Light is Switched ON")
    elif m == "lightoff":
        print("Light is Switched OFF")
    print()
    print(m)

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    gas=random.randint(0,100)
    text = input('')
    myData={'temperature':temp, 'humidity':hum, 'gas':gas, 'text':text}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=
    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```

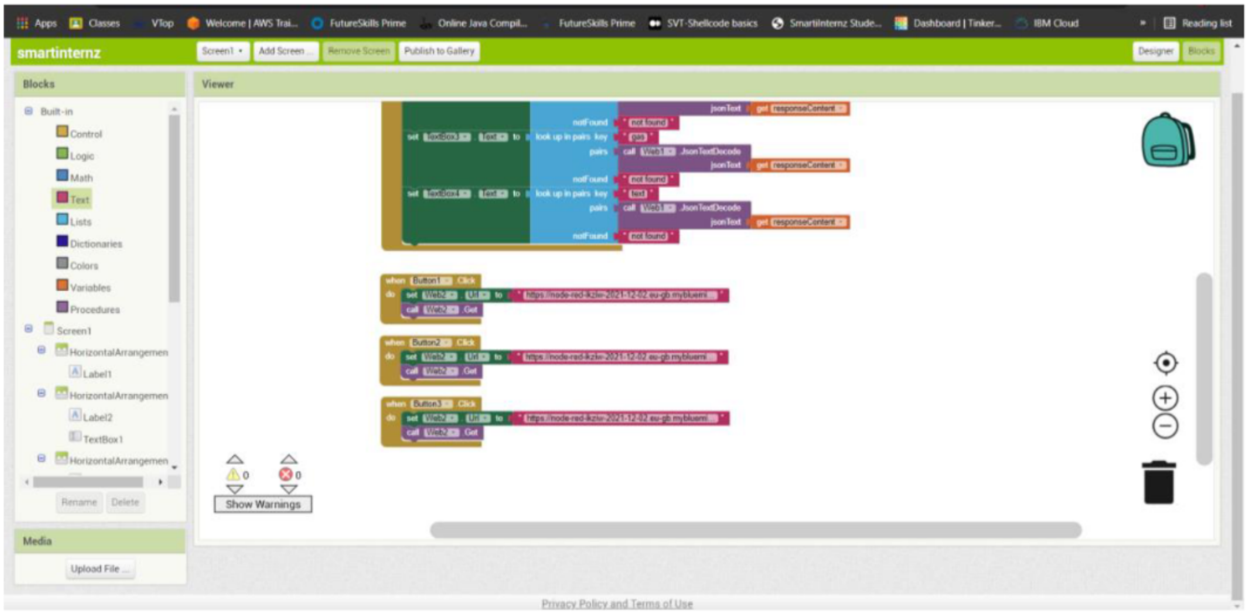
MIT app inventor:



Block diagram:

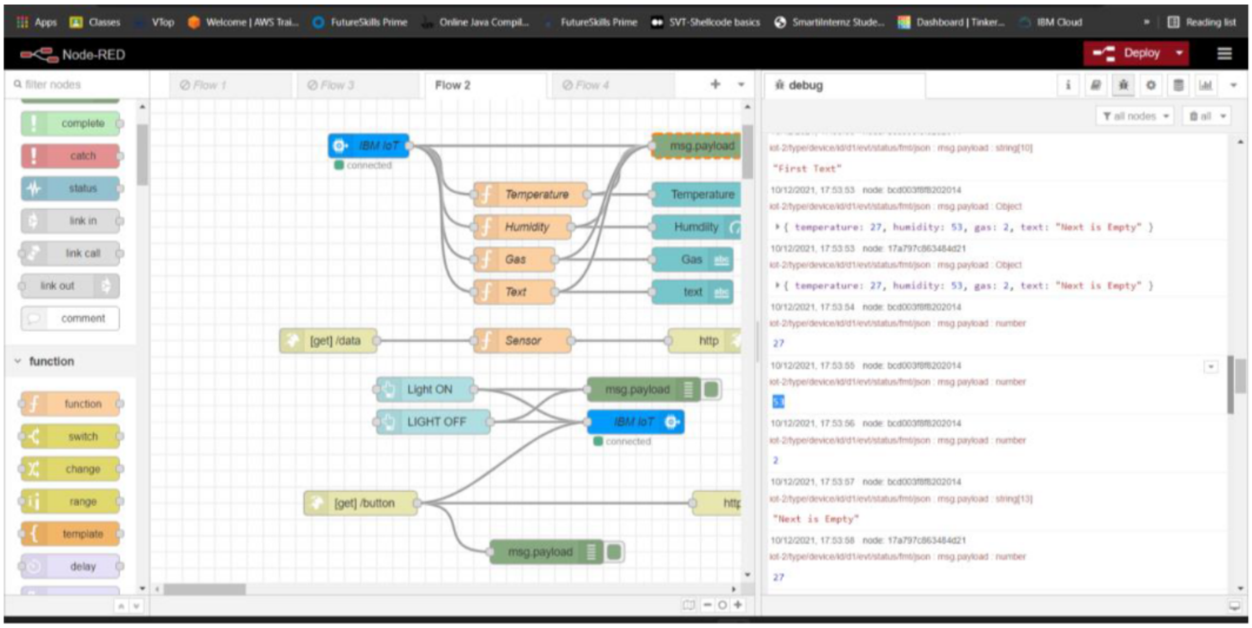


```
when Clock1.Timer
do  set Web1.Url to "https://node-red-ikziw-2021-12-02.eu-gb.mybluemi..."
    call Web1.Get

when Web1.GotText
 url  responseCode  responseType  responseContent
do  set TextBox2.Text to  look up in pairs key  "temperature"
                                       pairs  call Web1.JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  "not found"
    set TextBox1.Text to  look up in pairs key  "humidity"
                                       pairs  call Web1.JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  "not found"
    set TextBox3.Text to  look up in pairs key  "gas"
                                       pairs  call Web1.JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  "not found"
    set TextBox4.Text to  look up in pairs key  "text"
                                       pairs  call Web1.JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  "not found"

when Button1.Click
do  set Web2.Url to "https://node-red-ikziw-2021-12-02.eu-gb.mybluemi..."
    call Web2.Get
```

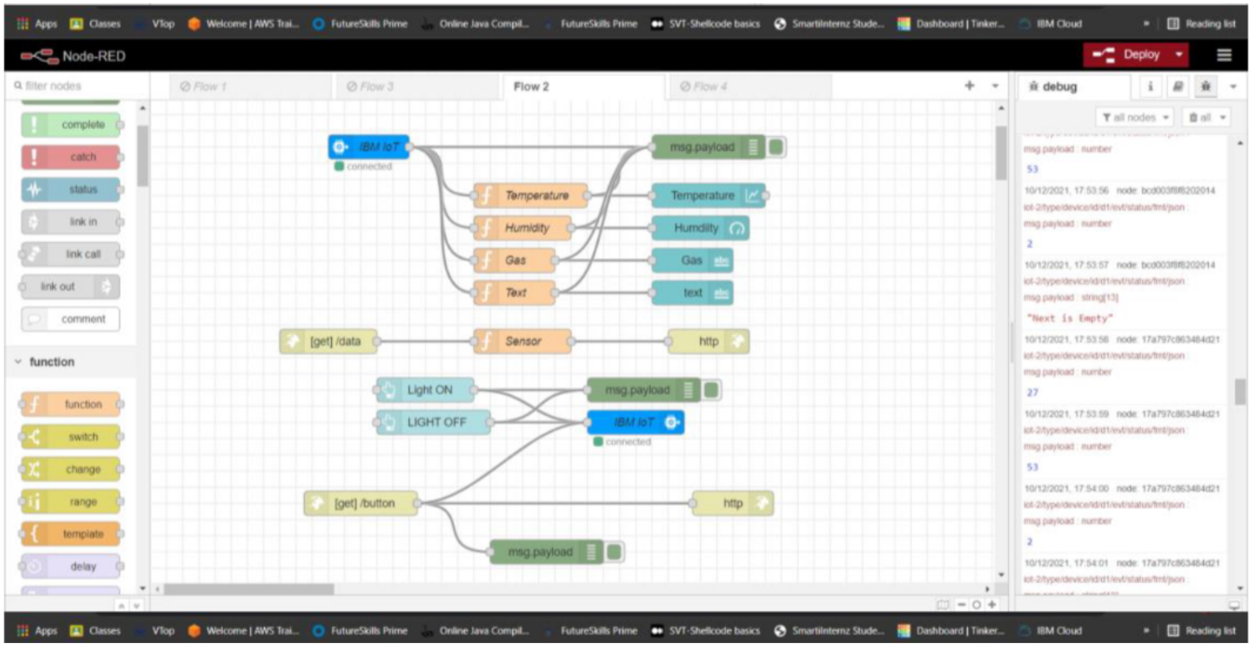


```
                                    jsonText  get responseContent
                                    notFound  " not found "
set TextBox3 . Text to  look up in pairs key  " gas "
                                    pairs     call Web1 .JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  " not found "
set TextBox4 . Text to  look up in pairs key  " text "
                                    pairs     call Web1 .JsonTextDecode
                                                        jsonText  get responseContent
                                    notFound  " not found "

when Button1 .Click
do  set Web2 . Url to " https://node-red-ikziw-2021-12-02.eu-gb.mybluemi... "
    call Web2 .Get

when Button2 .Click
do  set Web2 . Url to " https://node-red-ikziw-2021-12-02.eu-gb.mybluemi... "
    call Web2 .Get

when Button3 .Click
do  set Web2 . Url to " https://node-red-ikziw-2021-12-02.eu-gb.mybluemi... "
    call Web2 .Get
```

Node-RED Flow Diagram:

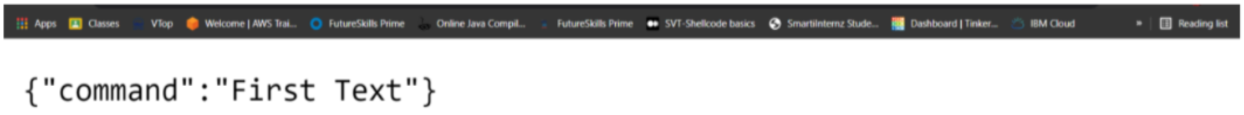


```
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : string[10]
"First Text"
10/12/2021, 17:53:53   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : Object
▸{ temperature: 27, humidity: 53, gas: 2, text: "Next is Empty" }
10/12/2021, 17:53:53   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : Object
▸{ temperature: 27, humidity: 53, gas: 2, text: "Next is Empty" }
10/12/2021, 17:53:54   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : number
27
10/12/2021, 17:53:55   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : number
53
10/12/2021, 17:53:56   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : number
2
10/12/2021, 17:53:57   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : string[13]
"Next is Empty"
10/12/2021, 17:53:58   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json : msg.payload : number
27
```



```
msg.payload : number
53
10/12/2021, 17:53:56   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json :
msg.payload : number
2
10/12/2021, 17:53:57   node: bcd003f8f8202014
iot-2/type/device/id/d1/evt/status/fmt/json :
msg.payload : string[13]
"Next is Empty"
10/12/2021, 17:53:58   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json :
msg.payload : number
27
10/12/2021, 17:53:59   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json :
msg.payload : number
53
10/12/2021, 17:54:00   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json :
msg.payload : number
2
10/12/2021, 17:54:01   node: 17a797c863484d21
iot-2/type/device/id/d1/evt/status/fmt/json :
```

Web page URL:



```
{"command":"First Text"}
```