Water- Level and Light- Intensity

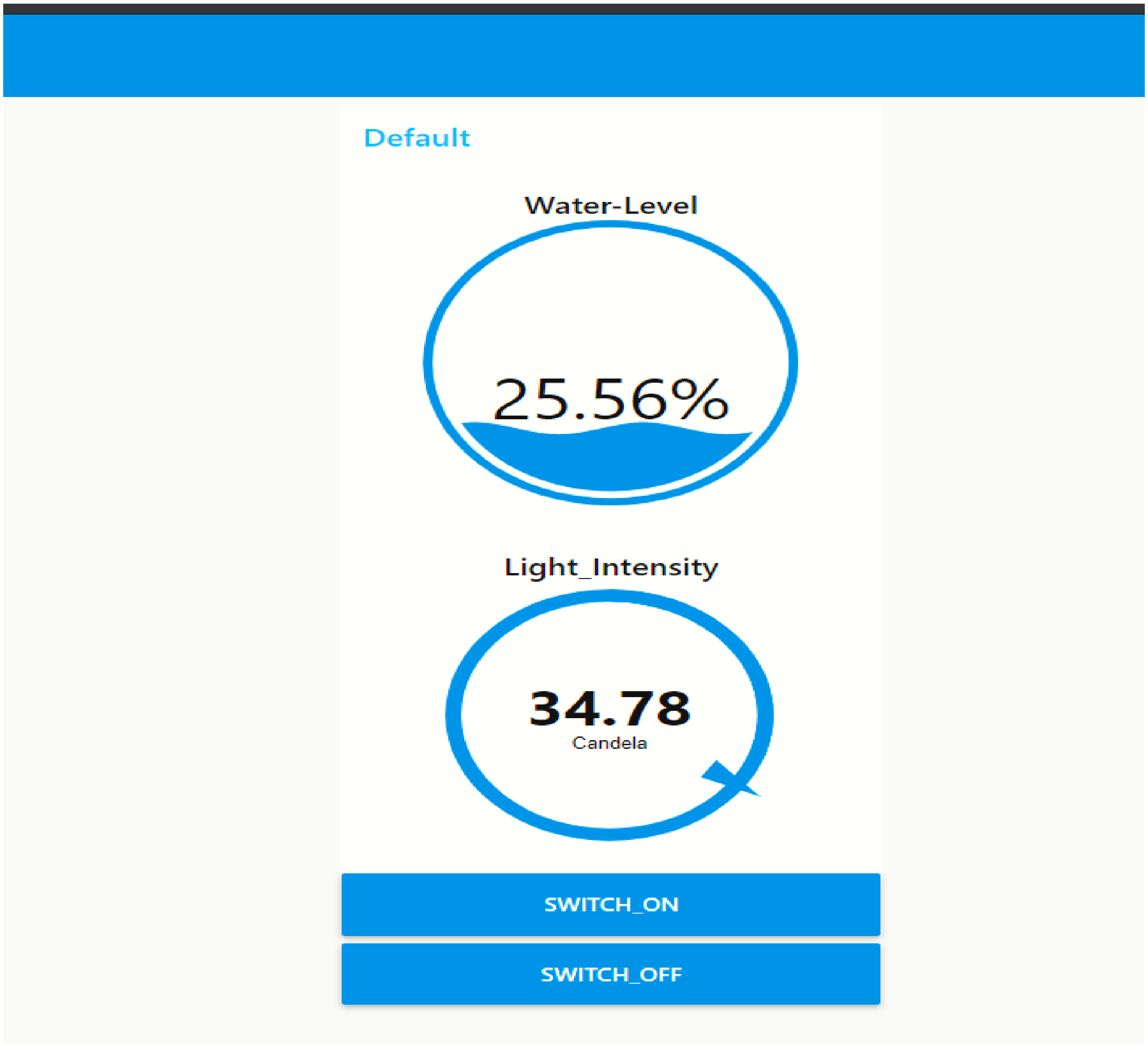
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
import json

#Provide your IBM Watson Device Credentials
organization ="kbfeya"
deviceType = "IOTDEVICE"
deviceId = "1010 "
authMethod = "token"
authToken = "07_13*11&83"


# Initialize the device client.
WL=0
LI=0
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])


    if cmd.data['command']=='switchon':
        print("SWITCH ON IS RECEIVED")
    elif cmd.data['command']=='switchoff':
        print("SWITCH OFF IS RECEIVED")


    if cmd.command == "setInterval":
        if 'interval' not in cmd.data:
            print("Error -  command is missing required information: 'interval'")
        else:
            interval = cmd.data['interval']
    elif cmd.command == "print":
        if 'message' not in cmd.data:
            print("Error -  command is missing required information: 'message'")
        else:
            print(cmd.data['message'])


try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth- method": authMethod, "auth
- token": authToken}
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #..............................................


except Exception as e:
        print("Caught exception connecting device: %s" % str(e))
        sys.exit()


# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times
deviceCli.connect()


while True:
    WL=29.58
    LI=35.46

    #Send Water- Level & Light Intensity  to IBM Watson

    data =jsondata={"d":{ 'waterlevel': WL, 'lightintensity': LI}}

    print (data)

    def myOnPublishCallback():

       print ("Published Water Level = %s %%" % WL, "Light Instensity = %s %%" % LI, "to IBM Watson")


    success = deviceCli.publishEvent("Data", "json", data, qos=0, on_publish=myOnPublishCallback)

    if not success:

       print("Not connected to IoTF")

    time.sleep(1)


    deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud

deviceCli.disconnect()
```

Python Program Output:

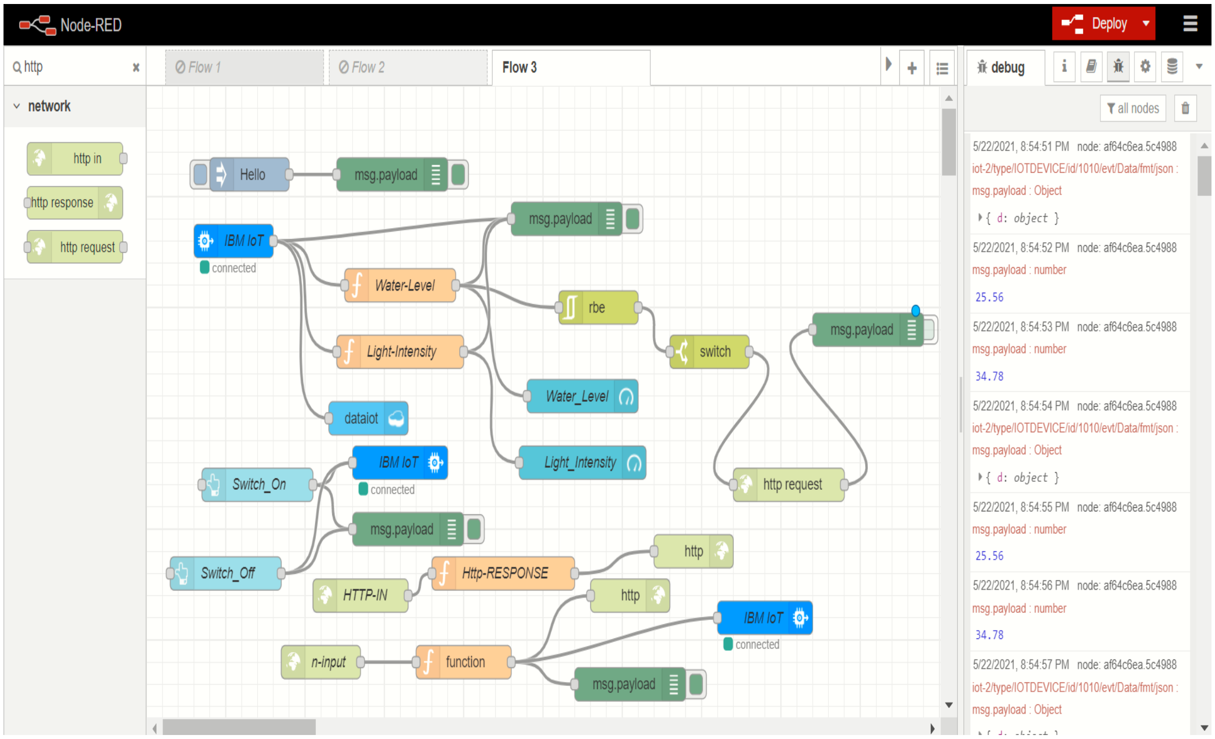
```
Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson

{'d': {'waterlevel': 25.56, 'lightintensity': 34.78}}

Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson

{'d': {'waterlevel': 25.56, 'lightintensity': 34.78}}

Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson

{'d': {'waterlevel': 25.56, 'lightintensity': 34.78}}

Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson

Command received: switchon

SWITCH ON IS RECEIVED

{'d': {'waterlevel': 25.56, 'lightintensity': 34.78}}

Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson
```

```
{'d': {'waterlevel': 25.56, 'lightintensity': 34.78}}
Published Water Level = 25.56 % Light Instensity = 34.78 % to IBM Watson
Command received: switchon
SWITCH ON IS RECEIVED
```

User Interface Image:

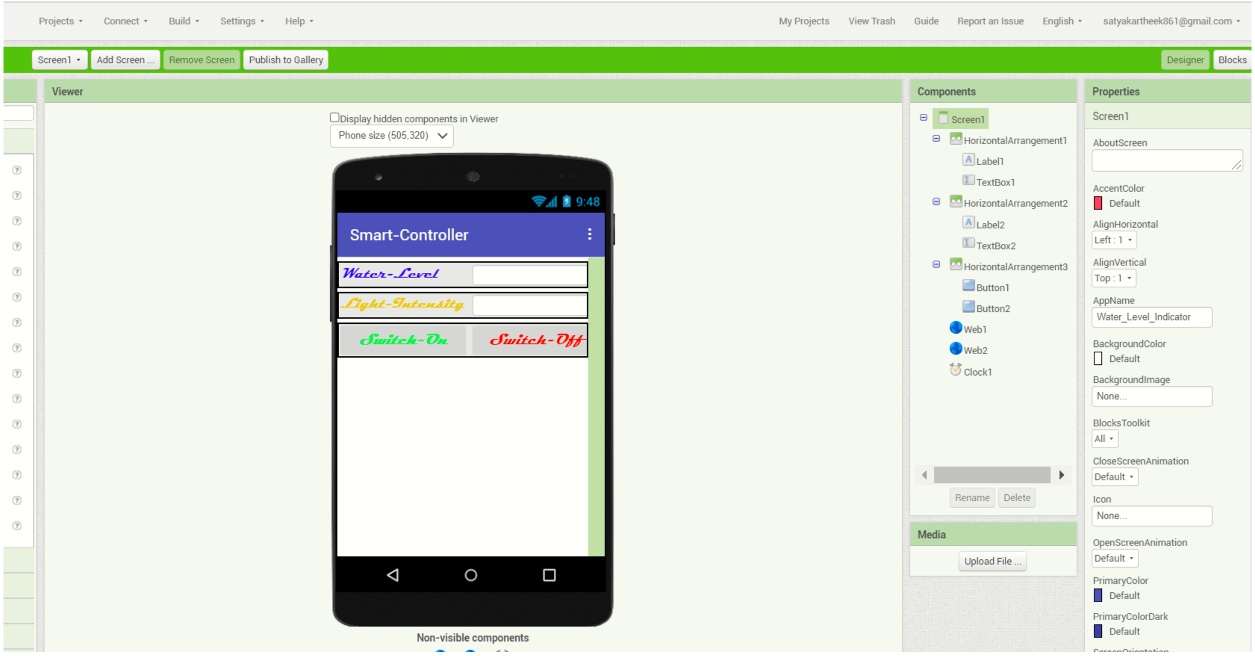


Node- Red Connections:



```
5/22/2021, 8:54:51 PM   node: af64c6ea.5c4988
iot-2/type/IOTDEVICE/id/1010/evt/Data/fmt/json :
msg.payload : Object
▸{ d: object }
5/22/2021, 8:54:52 PM   node: af64c6ea.5c4988
msg.payload : number
25.56
5/22/2021, 8:54:53 PM   node: af64c6ea.5c4988
msg.payload : number
34.78
5/22/2021, 8:54:54 PM   node: af64c6ea.5c4988
iot-2/type/IOTDEVICE/id/1010/evt/Data/fmt/json :
msg.payload : Object
▸{ d: object }
5/22/2021, 8:54:55 PM   node: af64c6ea.5c4988
msg.payload : number
25.56
5/22/2021, 8:54:56 PM   node: af64c6ea.5c4988
msg.payload : number
34.78
5/22/2021, 8:54:57 PM   node: af64c6ea.5c4988
iot-2/type/IOTDEVICE/id/1010/evt/Data/fmt/json :
msg.payload : Object
```

MIT DESIGN:



Screen1
- HorizontalArrangement1
  - Label1
  - TextBox1
- HorizontalArrangement2
  - Label2
  - TextBox2
- HorizontalArrangement3
  - Button1
  - Button2
- Web1
- Web2
- Clock1

Screen1

AboutScreen

AccentColor
🟥 Default

AlignHorizontal
Left : 1 ▾

AlignVertical
Top : 1 ▾

AppName
Water_Level_Indicator

BackgroundColor
□ Default

BackgroundImage
None...

BlocksToolkit
All ▾

CloseScreenAnimation
Default ▾

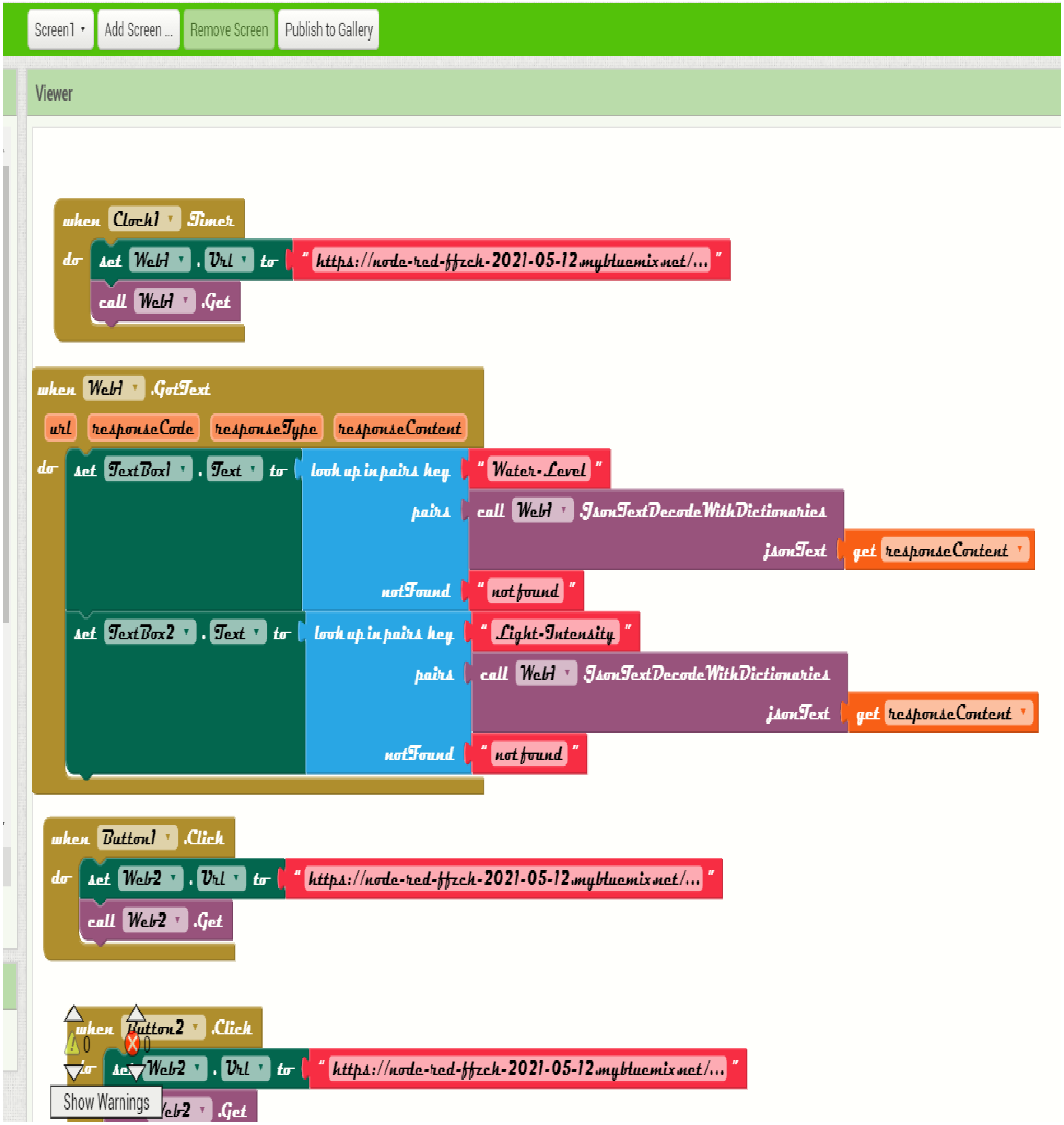
Icon
None...

OpenScreenAnimation
Default ▾

PrimaryColor
🟦 Default

PrimaryColorDark
🟦 Default

MIT BLOCKS



```
when Clock1 .Timer
do  set Web1 . Url to " https://node-red-ffzch-2021-05-12.mybluemix.net/... "
    call Web1 .Get

when Web1 .GotText
 url  responseCode  responseType  responseContent
do  set TextBox1 . Text to  look up in pairs key " Water-Level "
                                            pairs  call Web1 .JsonTextDecodeWithDictionaries
                                                                            jsonText  get responseContent
                                         notFound " not found "
    set TextBox2 . Text to  look up in pairs key " Light-Intensity "
                                            pairs  call Web1 .JsonTextDecodeWithDictionaries
                                                                            jsonText  get responseContent
                                         notFound " not found "

when Button1 .Click
do  set Web2 . Url to " https://node-red-ffzch-2021-05-12.mybluemix.net/... "
    call Web2 .Get

when Button2 .Click
    set Web2 . Url to " https://node-red-ffzch-2021-05-12.mybluemix.net/... "
        eb2 .Get
```