

Python code:

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

#Provide your IBM Watson Device Credentials
organization = "2c6fii"
deviceType = "iotdevice"
deviceId = "100"
authMethod = "token"
authToken = "9666870383"

# Initialize the device client.

T=0

H=0

def myCommandCallback(cmd):
    print("Command received: %s" %
cmd.data['command'])
```

```
if cmd.data['command']=='lighton':
    print("LIGHT ON IS RECEIVED")

elif cmd.data['command']=='lightoff':
    print("LIGHT 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:  
    T=23  
    H=45  
    #Send Temperature & Humidity to IBM Watson  
    data = {"d":{ 'temperature' : T, 'humidity': H }}  
    print (data)
```

```
def myOnPublishCallback():  
    print ("Published Temperature = %s C" % T,  
"Humidity = %s %%" % H, "to IBM Watson")  
  
    success = deviceCli.publishEvent("Data", "json",  
data, qos=0, on_publish=myOnPublishCallback)  
    if not success:  
        print("Not connected to IoT")  
        time.sleep(1)  
  
    deviceCli.commandCallback =  
myCommandCallback  
  
# Disconnect the device and application from the cloud  
deviceCli.disconnect()
```

Python code output:

Published Temperature = 23 C Humidity = 45 % to IBM
Watson

{'d': {'temperature': 23, 'humidity': 45}}

Published Temperature = 23 C Humidity = 45 % to IBM
Watson

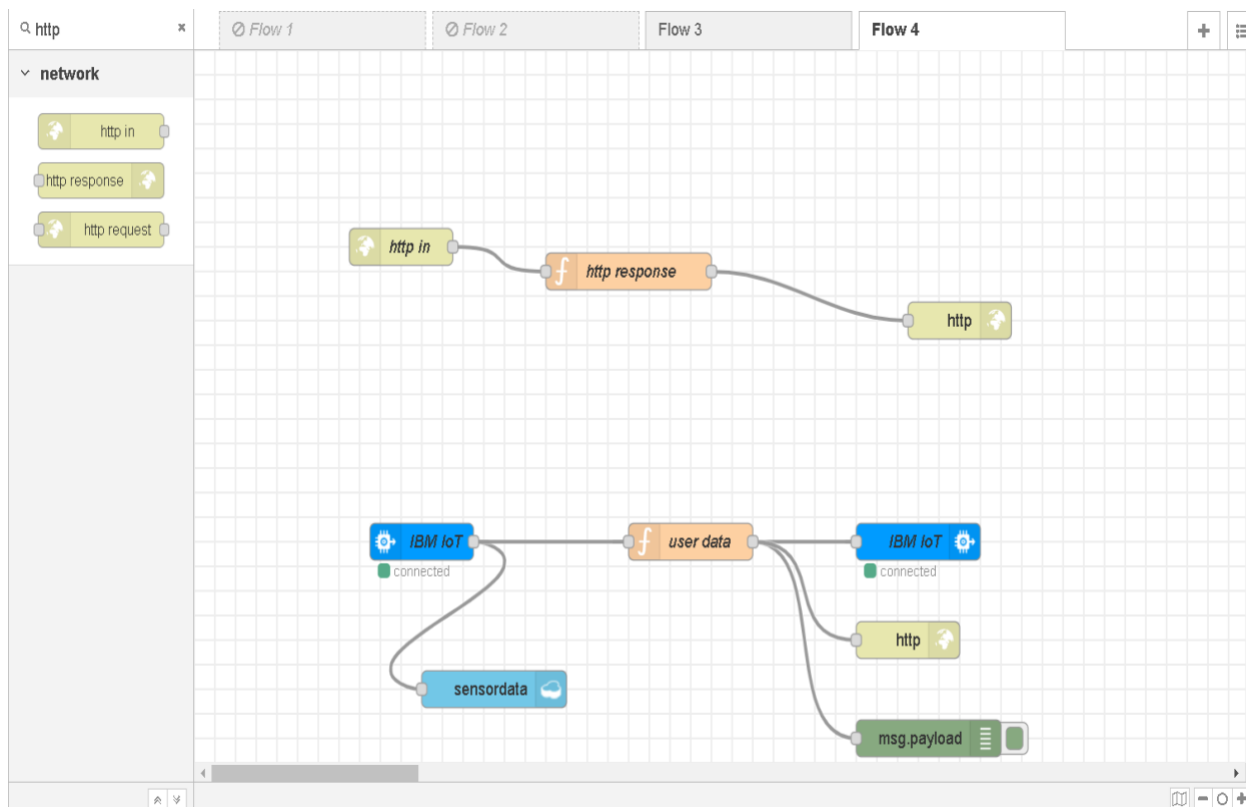
{'d': {'temperature': 23, 'humidity': 45}}

Published Temperature = 23 C Humidity = 45 % to IBM Watson

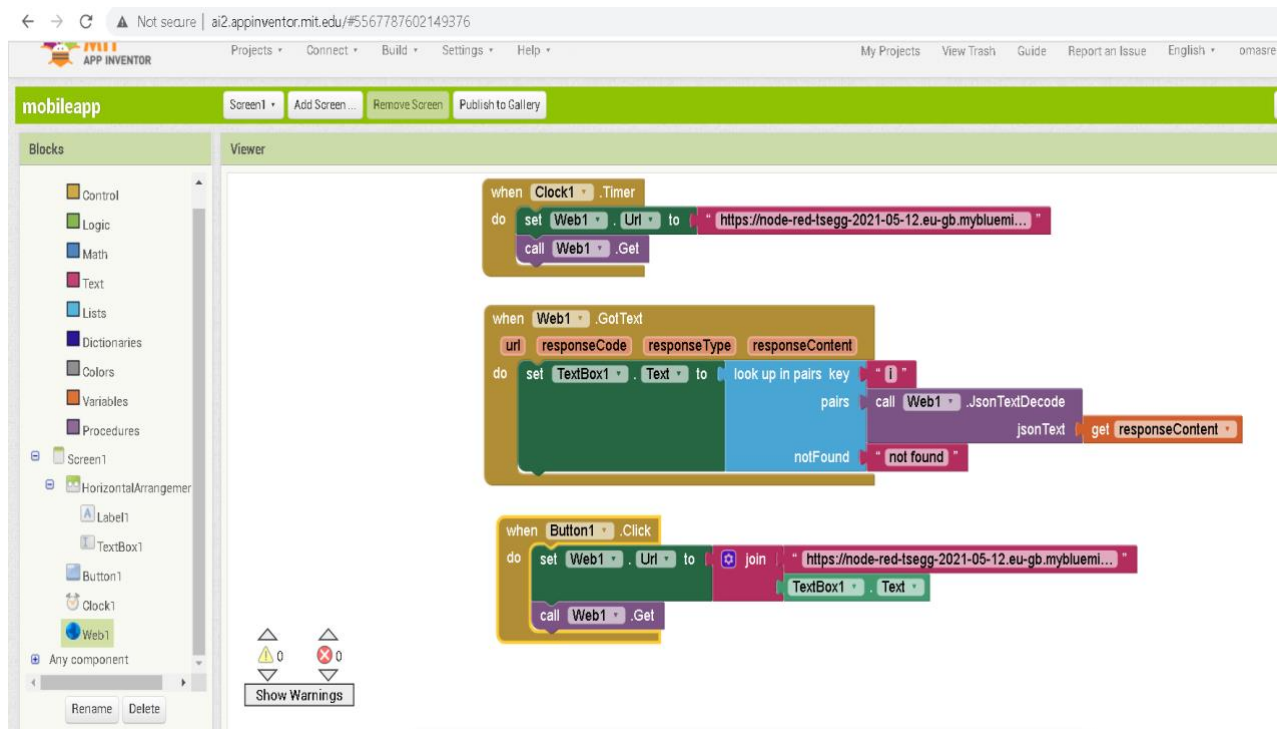
```
{'d': {'temperature': 23, 'humidity': 45}}
```

Published Temperature = 23 C Humidity = 45 % to IBM Watson

Node red connections:



Mit app inventor:



Mobile app:

