Assignment-4

Develop a mobile application that takes the user input and sends it to 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 user enters the text input in text box and clicks the button the data should be sent to IBM cloud using URL(HTTP API).

Code:

```
import ibmiotf.application

import ibmiotf.device

import random

import json

import time


#Provide your IBM Watson Device Credentials

organization = "gm7uz1"

deviceType = "iotdevice"

deviceId = "1001"

authMethod = "token"

authToken = "devesh1104"


# Initialize the device client.

T=0

H=0
```

```python
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'])
```

```python
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 IoTF")

    time.sleep(1)


    deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud

deviceCli.disconnect()
```
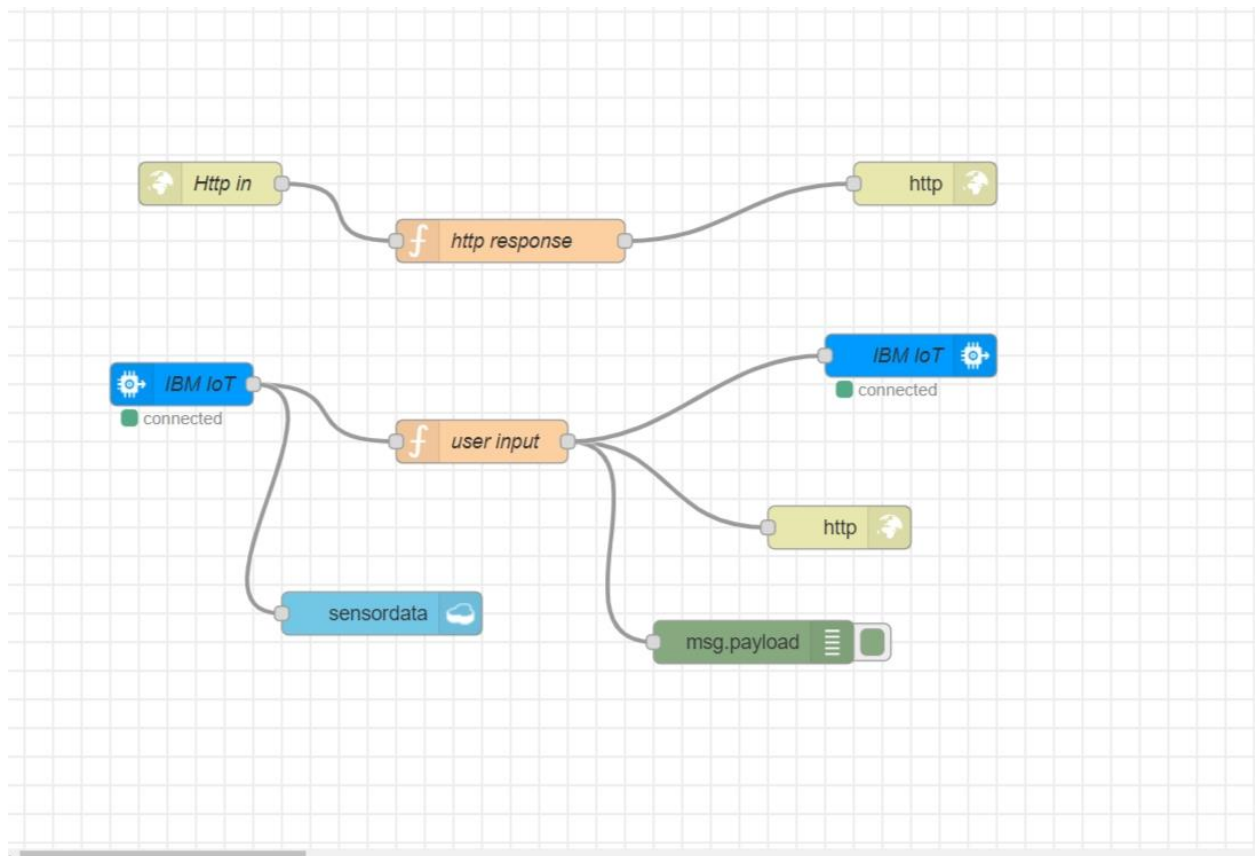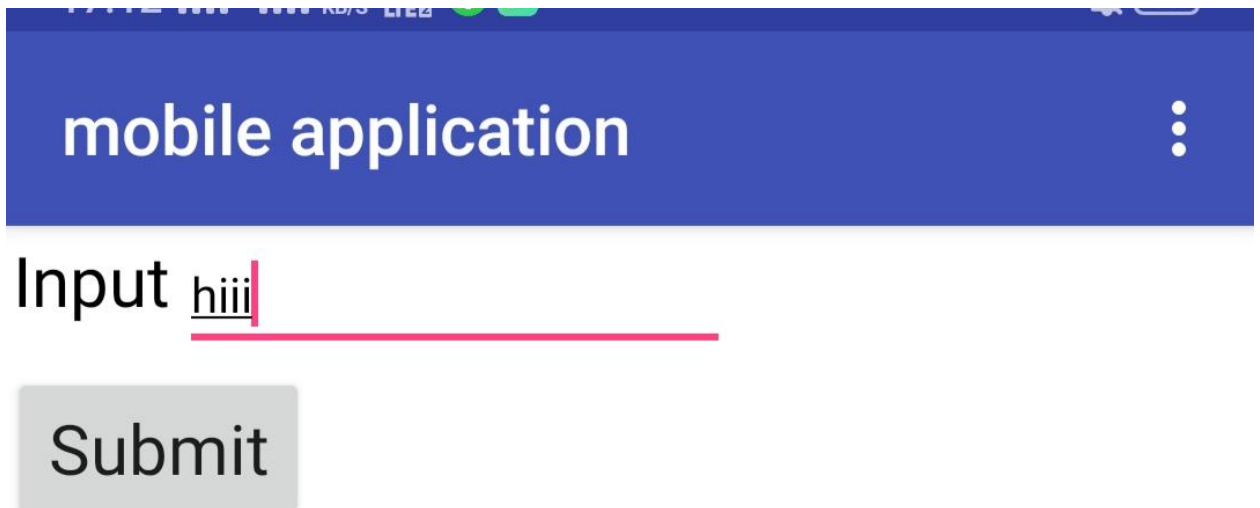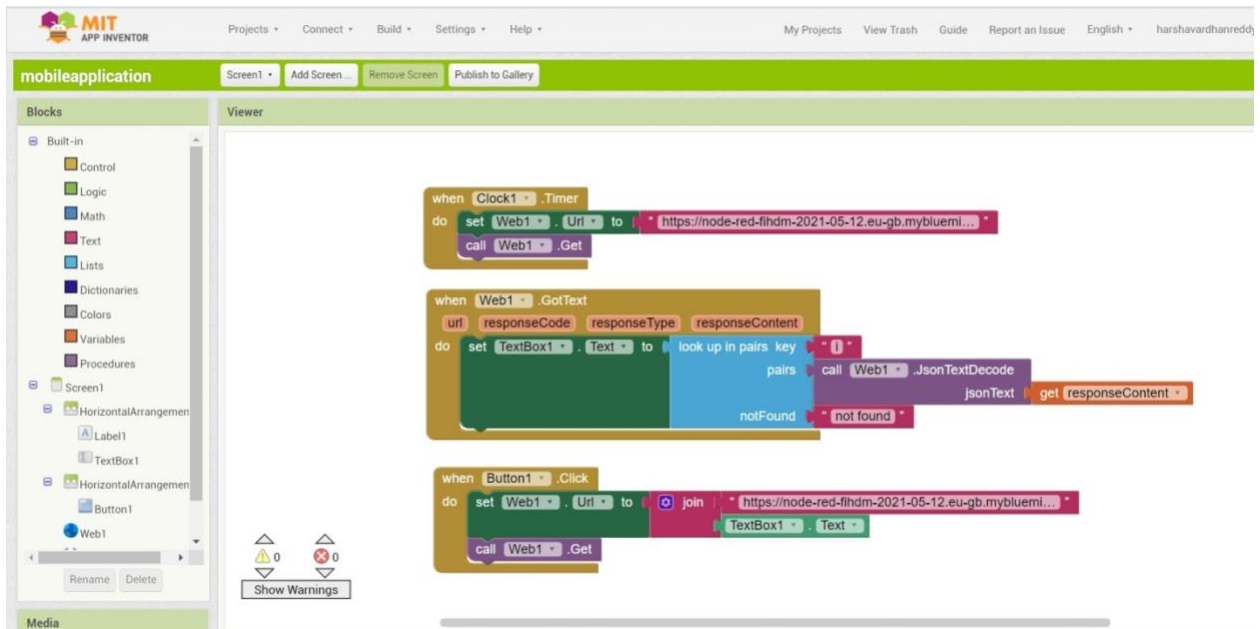
Node Red:

MIT APP INVENTOR:

Python Output:

IDLE Shell 3.9.2

File Edit Shell Debug Options Window Help

Python 3.9.2 (tags/v3.9.2:1a79785, Feb 19 2021, 13:44:55) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/admin/AppData/Local/Programs/Python/Python39/mobile app.py =
2021-05-25 17:11:25,368   ibmiotf.device.Client   INFO   Connected successfully: d:frtx4v:iotdevice:1001
Published Temperature = 23 C Humidity = 45 % to IBM Watson
Published Temperature = 23 C Humidity = 45 % to IBM Watson
Published Temperature = 23 C Humidity = 45 % to IBM Watson
Published Temperature = 23 C Humidity = 45 % to IBM Watson
Published Temperature = 23 C Humidity = 45 % to IBM Watson
Command received: hiii
Published Temperature = 23 C Humidity = 45 % to IBM Watson