GOVERNMENT COLLEGE OF ENGINEERING

CHETTIKARAI, DHARMAPURI

SMART FARMER – IOT ENABLED SMART FARMING APPLICATION

IBM NALAIYATHIRAN

Project Development -Delivery of Sprint 1

Creating And Connecting IBM cloud for Project and Python Code

TITLE	Smart Farmer IoT Enabled Smart Farming Application
DOMAIN NAME	INTERNET OF THINGS
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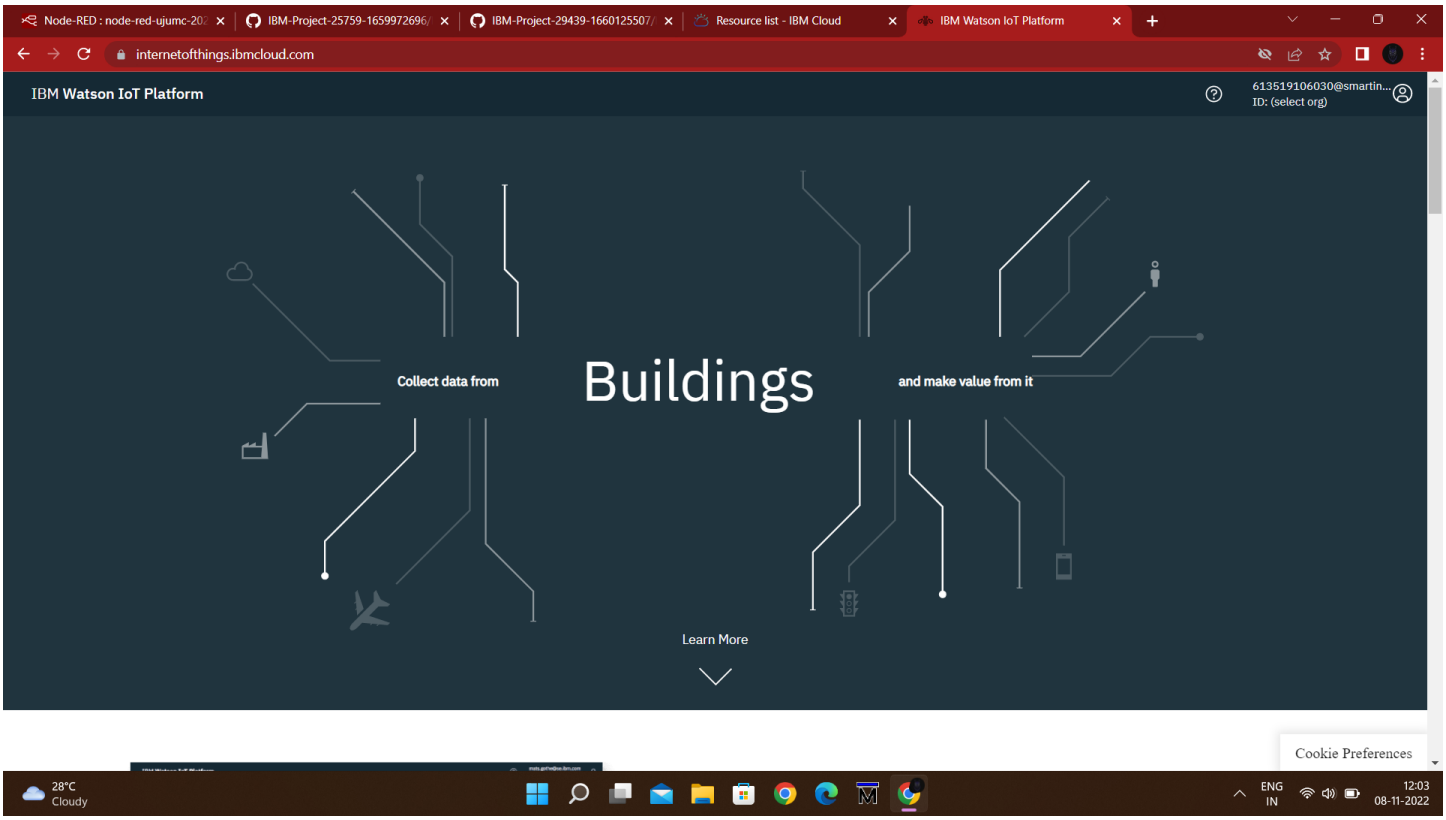
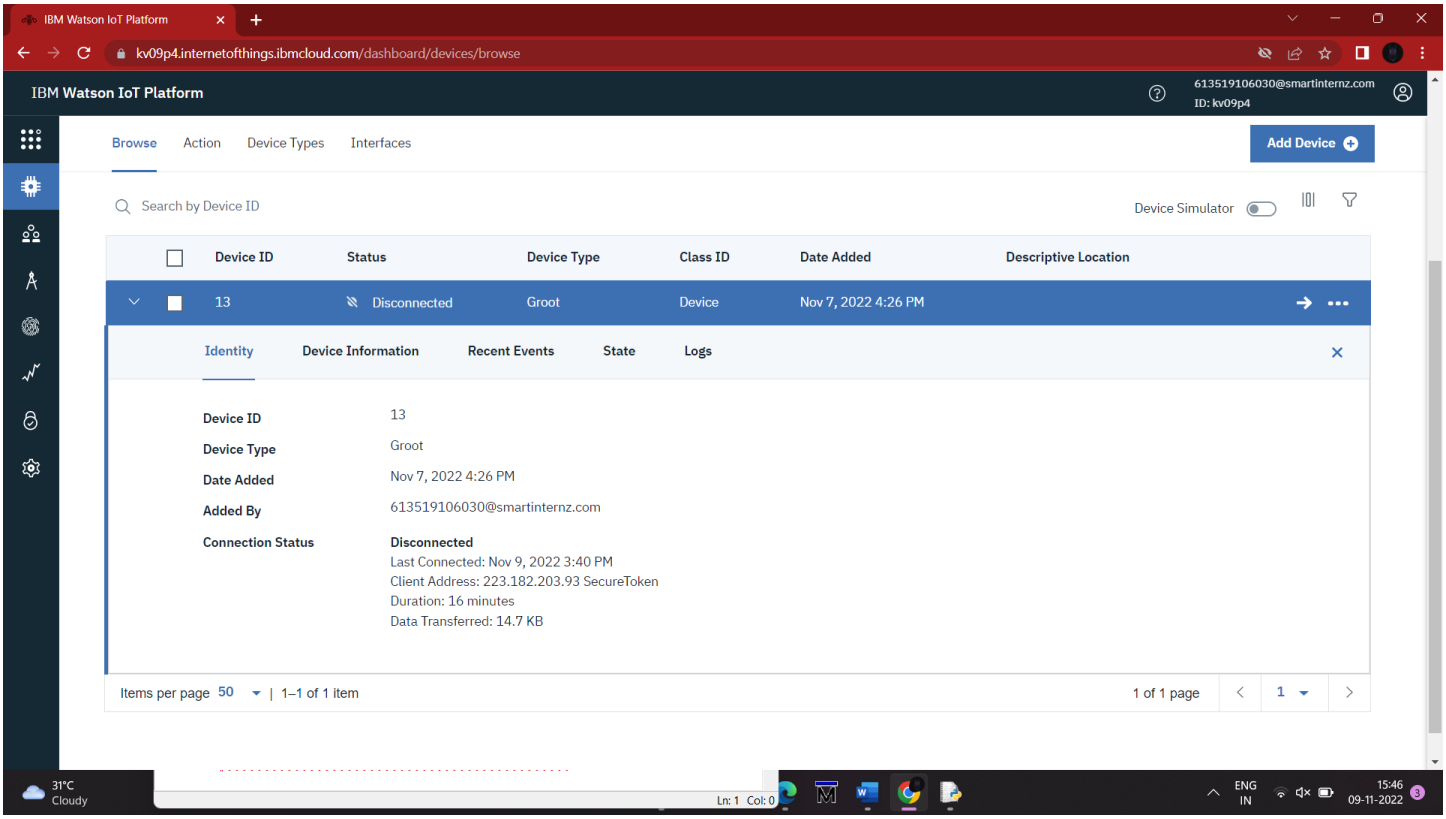
Creating IBM cloud device:





Creating Python Code:

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


#Provide your IBM Watson Device Credentials
organization = "kv09p4"
deviceType = "Groot"
deviceId = "13"
authMethod = "token"
authToken = "12345678"
global y
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    if status=="motoroff" :
        print ("motor is off")
    if status=="manual" :
        print ("Motor Control is in Manual Mode")
    if status=="automatic" :
        print ("Motor control is in Automatic Mode")
        if soilmoisture > 600:
            print ("motor is on")
    #print(cmd)
```

```
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:
    #Get Sensor Data from DHT11
    temp=random.randint(0,100)
    Humid=random.randint(0,100)
    soilmoisture=random.randint(0,1023)
    Phlevel=random.randint(0,14)
    y=soilmoisture
    data = { 'temp' : temp, 'Humid': Humid,'soilmoisture' : soilmoisture ,'Phlevel' : Phlevel }
    #print data
    def myOnPublishCallback():
      print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid,"Soil Moisture is %s %%" % soilmoisture,"PH level is %s" %Phlevel ,"to IBM Watson")

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
    if not success:
      print("Not connected to IoTF")
    time.sleep(10)

    deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

Connecting IBM Watson and Python Code: