**REAL TIME WATER QUALITY MONITORING & CONTROL SYSTEM**

**FINAL CODE**

**import time**

**import sys**

**import ibmiotf.application**

**import ibmiotf.device**

**import random**

**#Provide your IBM Watson Device Credentials**

**organization = "shg55z"**

**deviceType = "abcd"**

**deviceId = "12345"**

**authMethod = "token"**

**authToken = "12345678"**

**# Initialize GPIO**

**def myCommandCallback(cmd):**

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

**status=cmd.data['command']**

**if status=="lighton":**

**print ("led is on")**

**elif status == "lightoff":**

**print ("led is off")**

**else :**

**print ("please send proper command")**

**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(90,110)**

**turbidity=random.randint(60,100)**

**ph=random.randint(6,10)**

**data = { 'temp' : temp, 'turbidity': turbidity,'Ph':ph }**

**#print data**

**def myOnPublishCallback():**

**print ("Published Temperature = %s C" % temp,"ph=%s"%ph, "turbidity = %s %%" % turbidity, "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()**