REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

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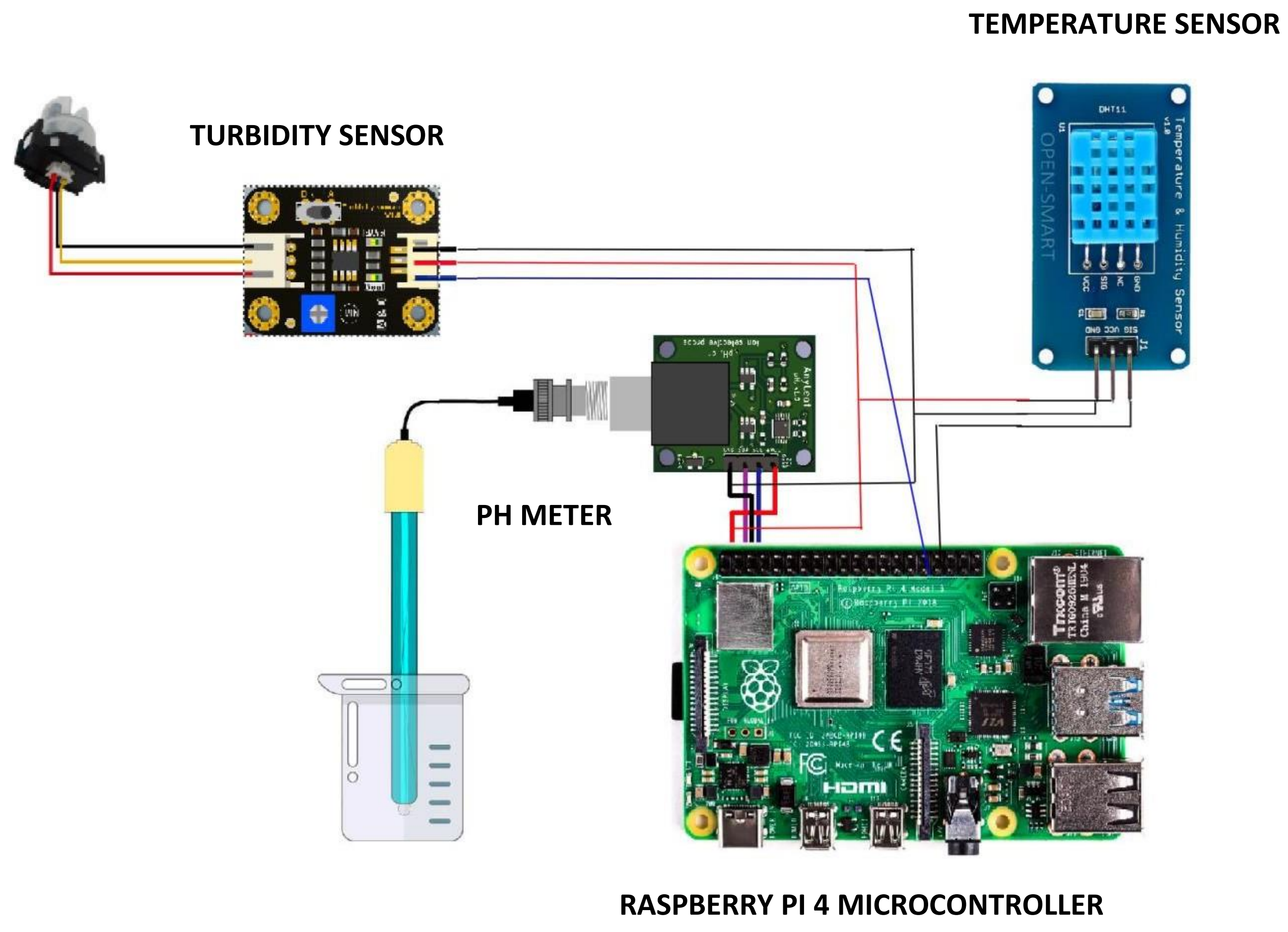
CIRCUIT DIAGRAM



PROGRAM:

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

#provide Your IBM Watson Device Credentials
organization = "oo25i5"
deviceType = "gv"
deviceID = "1607"
authMethod = "token"
authToken = "12341607"


#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" info the cloud as an event of
type"greetings"10 times
deviceCli.connect()

while True:
      #Get sensor Data from DHT11

      temp=random.randint(90,110)
      pH=random.randint(0,14)
      turbidity=random.randint(0,100)

      data = { 'Temperature' : temp, 'pH': pH, 'Turbidity':turbidity }
```

```
        #print data
        def myOnPublishCallback():
            print ("published Temperature = %s C" %  temp, "pH = is %s %%" % pH, "Turbidity= is %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()
```