PYTHON CODE FOR MEASURING WATER PARAMETERS

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import plyer
from plyer import notification
import sys
import random
sys.setrecursionlimit(10**6)
#Temperature of water
sysvolt=5
adc_resol=4095
max_v=4
min_v=0
min_temp=-50
max_temp=80
def adc_value(v):
    if(v>=min_v and v<=max_v):
      adc=(v*(adc_resol/sysvolt))
      return round(adc)
    else:
        return None
def adc_to_c(x):
    if x==0:
        return -50
    else:
        return((adc_to_c(x-1))+0.05)

def temp(v):
    print(f"sensor read: {v} volt")
    ADC=adc_value(v)
    n = round(adc_to_c(ADC))
    print(f"temperature: {n}")
    if (n>= 56 and n<= 125):
      print("HOT")
    elif (n >= 40  and n <= 55):
      print("WARM")
    elif (n >= 25  and n <= 39):
      print("NORMAL")
    elif (n >= 10  and n <= 24):
      print("COOL")
    elif (n >= 0   and n <= 9):
      print("COLD")
    elif (n >= -50 and n <= -1):
      print("FREEZE")
v= random.randint(0,4)
#pH value
mV=random.randint(-400,400)
```

```
def ph(mV):
    pH= round(7*(1-mV/400))
    print(f"{pH} pH ")

#Concentration of water
mili=random.randint(0,1)
def ppm(mili):
   ppm = mili*1000
   print(f"{ppm}ppm")
   if(ppm>=0 and ppm<=50):
      print("Ideal drinking water")
notification.notify(title='Alert',message='Ideal water',app_icon=None,timeout=10,)
   elif(ppm>=50 and ppm<=100):
      print("Carbon filtration,aquifers")
notification.notify(title='Alert',message='Aquifers',app_icon=None,timeout=10,)
   elif(ppm>=100 and ppm<=200):
      print("Marginally acceptable")
      notification.notify(title='Alert',message='Average tap water',app_icon=None,timeout=10,)
    elif(ppm>=200 and ppm<=400):
      print("High TDS")
     notification.notify(title='Alert',message='High TDS water',app_icon=None,timeout=10,)
    elif(ppm>=400 and ppm<=1000):
      print("Highly contaminated")
     notification.notify(title='Alert',message='Contaminated
Water',app_icon=None,timeout=10,)

#Assumption of river dimensions
width=156
depth=2.5
vel=random.randint(0,0.5)
def flow(vel):
  flow=vel*width*depth
  print(f"{flow} l/m"}
temp(v)
 ph(mV)
 ppm(mili)
 flow(vel)
```