

## Assignment 2

# Temperature and humidity monitoring using python

### Python code:

```
import random

def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
    minRoomHum=30
    maxRoomHum=50

    temp = random.randint(14,26)
    humidity = random.randint(29,51)

    if ((temp>=minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and
(humidity<=maxRoomHum)):

        print("The temperature and humidity is optimum")

        tempMonitor()
    else:

        if(temp<minRoomTemp):

            print("The temperature is too cold:"+ str(temp))

        if(humidity<minRoomHum):

            print("The humidity is low:"+ str(humidity))

        if(temp>maxRoomTemp):

            print("The temperature is too hot:"+ str(temp))

        if(humidity>maxRoomHum):

            print(" ALERT: The humidity is high:"+ str(humidity))

    return
```

tempMonitor()

### **IDLE OUTPUT:**

The image shows a Python IDE window titled "Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py - E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py (3.10.6)". The menu bar includes File, Edit, Format, Run, Options, Window, and Help.

```
import random
def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
    minRoomHum=30
    maxRoomHum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and (humidity<=maxRoomHum)):
        print("The temperature and humidity is optimum")
        tempMonitor()
    else:
        if (temp<minRoomTemp):
            print("The temperature is too cold:"+ str(temp))
        if (humidity<minRoomHum):
            print("The humidity is low:"+ str(humidity))
        if (temp>maxRoomTemp):
            print("The temperature is too hot:"+ str(temp))
        if (humidity>maxRoomHum):
            print(" ALERT: The humidity is high:"+ str(humidity))
    return
tempMonitor()
```

An "IDLE Shell 3.10.6" window is open, showing the execution output:

```
File Edit Shell Debug Options Window Help
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature is too hot:26
>>>
```

The status bar at the bottom of the IDE shows "Ln: 24 Col: 0". The Windows taskbar at the very bottom displays the time as 11:00 AM on 2022-09-28.

```
File Edit Format Run Options Window Help

import random
def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
    minRoomHum=30
    maxRoomHum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>minRoomTemp)and(temp<=maxRoomTemp) and (humidity>minRoomHum) and (humidity<=maxRoomHum)):
        print("The temperature and humidity is optimum")
        tempMonitor()
    else:
        if(temp<minRoomTemp):
            print("The temperature is too cold:"+ str(temp))
        if(humidity<minRoomHum):
            print("The humidity is low:"+ str(humidity))
        if(temp>maxRoomTemp):
            print("The temperature is too hot:"+ str(temp))
        if(humidity>maxRoomHum):
            print(" ALERT: The humidity is high:"+ str(humidity))
    return
tempMonitor()
```

Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.

```
>>>
= RESTART: E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature is too cold:14
>>>
```

Ln: 16 Col: 0

```
import random
def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
    minRoomHum=30
    maxRoomHum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and (humidity<=maxRoomHum)):
        print("The temperature and humidity is optimum")
        tempMonitor()
    else:
        if(temp<minRoomTemp):
            print("The temperature is too cold:"+ str(temp))
        if(humidity<minRoomHum):
            print("The humidity is low:"+ str(humidity))
        if(temp>maxRoomTemp):
            print("The temperature is too hot:"+ str(temp))
        if(humidity>maxRoomHum):
            print(" ALERT: The humidity is high:"+ str(humidity))
    return
tempMonitor()
```

Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.

```
>>> = RESTART: E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
The temperature and humidity is optimum
ALERT: The humidity is high:51
>>>
```

Ln: 10 Col: 0

```
import random
def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
    minRoomHum=30
    maxRoomHum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>minRoomTemp)and (temp<maxRoomTemp) and (humidity>minRoomHum) and (humidity<maxRoomHum)):
        print("The temperature and humidity is optimum")
        tempMonitor()
    else:
        if(temp<minRoomTemp):
            print("The temperature is too cold:"+ str(temp))
        if(humidity<minRoomHum):
            print("The humidity is low:"+ str(humidity))
        if(temp>maxRoomTemp):
            print("The temperature is too hot:"+ str(temp))
        if(humidity>maxRoomHum):
            print(" ALERT: The humidity is high:"+ str(humidity))
    return
tempMonitor()
```

Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license()" for more information.

```
>>>
= RESTART: E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py
The humidity is low:29
The temperature is too hot:26
>>>
```

