

Assignment 2

Temperature and humidity monitoring using python

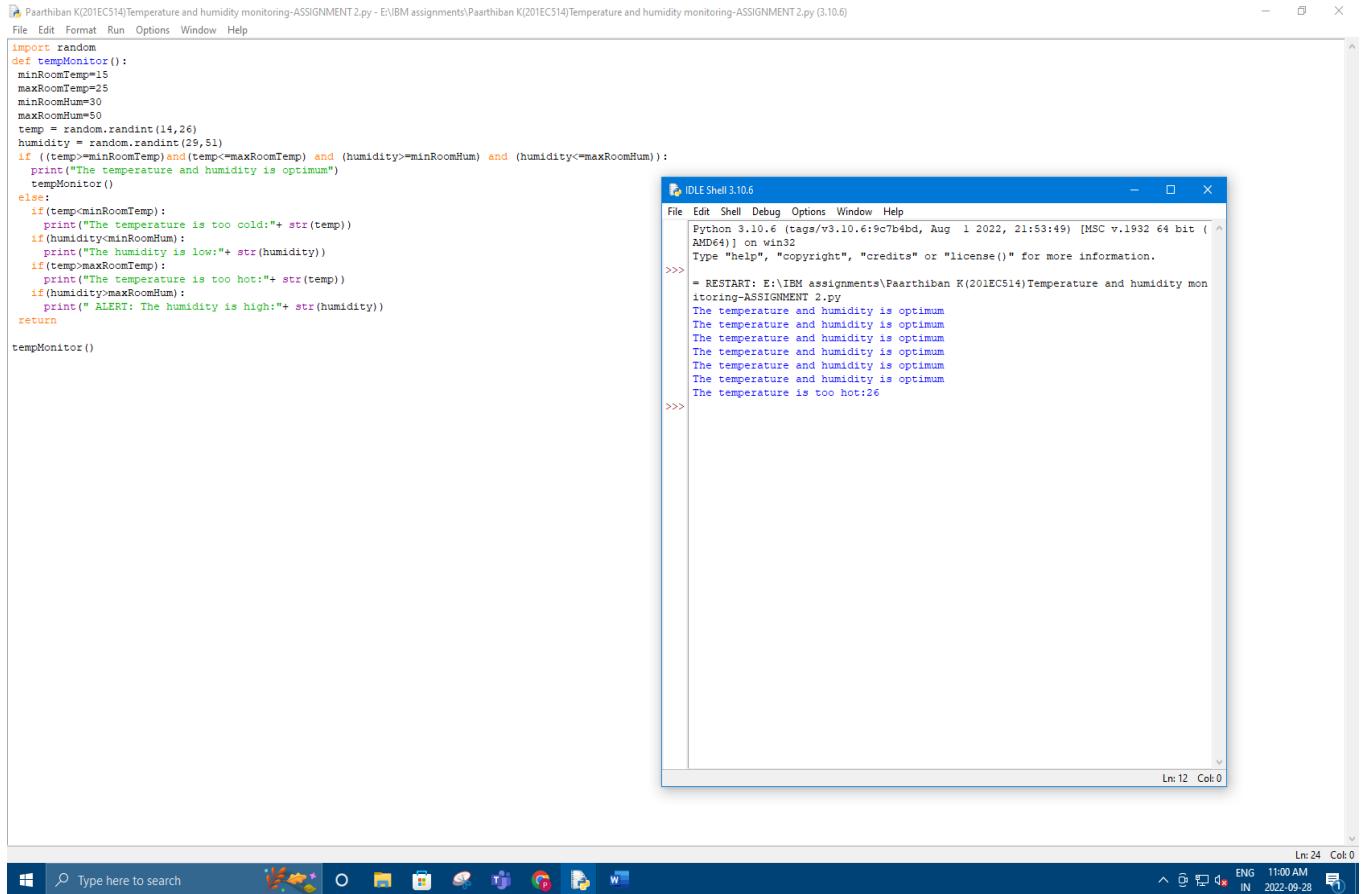
Python code:

```
import random

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

tempMonitor()

IDLE OUTPUT:



```
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)
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()
```

```
IDLE Shell 3.10.6
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 is too hot:26
>>>
```

Ln: 24 Col: 0

Ln: 12 Col: 0

Windows taskbar: Type here to search, 11:00 AM, 2022-09-28, ENG IN

tempMonitor()

File Edit Shell Debug Options Window Help

```
>>> = RESTART: E:\IBM assignments\Paarthiban K(201EC514)Temperature and humidity monitoring-ASSIGNMENT 2.py
```



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import random
def tempMonitor():
    minRoomTemp=15
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        if(humidity>maxRoomHum):
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tempMonitor()
```

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

The image shows a Windows desktop with a taskbar at the bottom. The taskbar includes the Start button, a search bar, and several application icons. The main area of the screen is divided into two windows.

The left window is a text editor showing a Python script named `tempMonitor.py`. The script defines a `tempMonitor()` function that uses the `random` module to generate random temperature and humidity values. It includes conditional logic to print messages when the temperature is too cold, too hot, or optimal, and when the humidity is too high or low. The function is then called.

```
import random
def tempMonitor():
    minRoomTemp=15
    maxRoomTemp=25
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        tempMonitor()
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        if(humidity<minRoomHum):
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        if(temp>maxRoomTemp):
            print("The temperature is too hot:"+ str(temp))
        if(humidity>maxRoomHum):
            print("ALERT: The humidity is high:"+ str(humidity))
    return
tempMonitor()
```

The right window is the IDLE Shell, showing the execution of the script. It displays the output of the `tempMonitor()` function, which prints "The temperature and humidity is optimum" and "The temperature is too hot:26" followed by "ALERT: The humidity is high:51". The shell also shows the file path and the Python version (3.10.6).

The bottom of the screen shows the Windows taskbar with the Start button, a search bar, and several application icons. The system tray on the right shows the date and time (11:04 AM, 2022-09-28).