

Assignment 2

Temperature and humidity monitoring using python

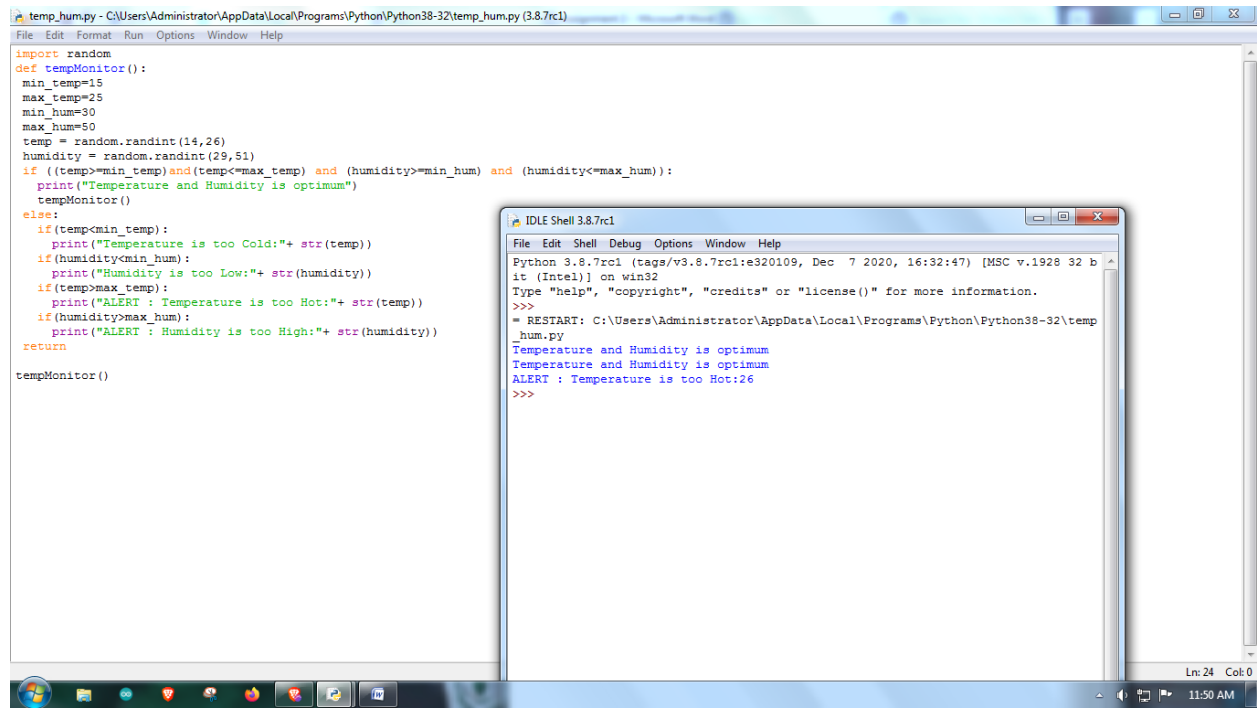
Python code:

```
import random

def tempMonitor():
    min_temp=15
    max_temp=25
    min_hum=30
    max_hum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>=min_temp)and(temp<=max_temp) and (humidity>=min_hum) and
(humidity<=max_hum)):
        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if(temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if(humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if(temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if(humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
```

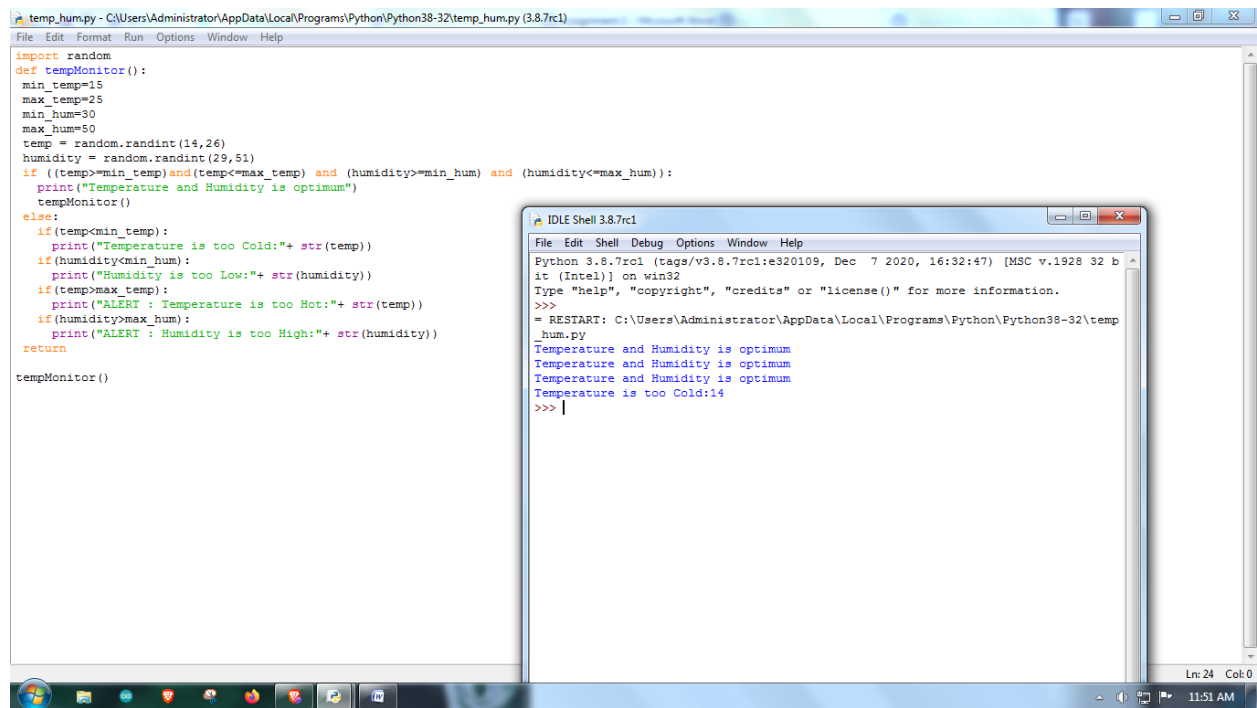
tempMonitor()

IDLE OUTPUT:



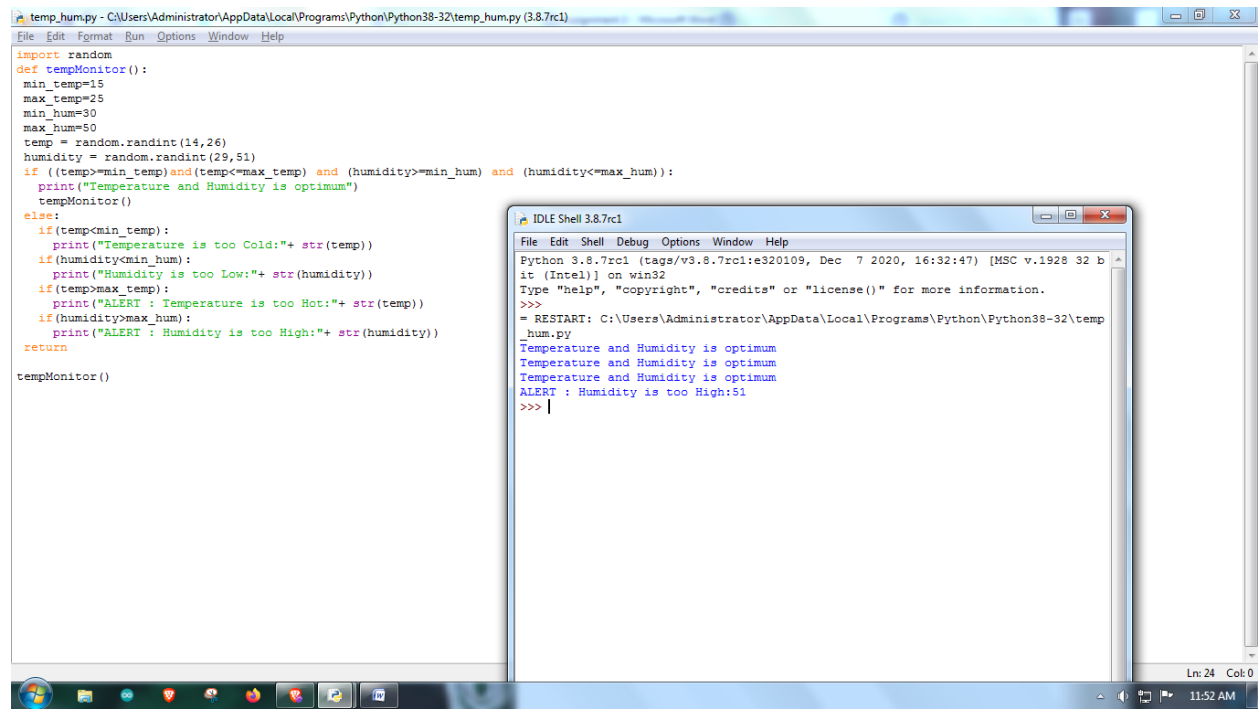
```
temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)
File Edit Format Run Options Window Help
import random
def tempMonitor():
    min_temp=15
    max_temp=25
    min_hum=30
    max_hum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>min_temp)and(temp<=max_temp) and (humidity>min_hum) and (humidity<=max_hum)):
        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if(temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if(humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if(temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if(humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
tempMonitor()

IDLE Shell 3.8.7rc1
File Edit Shell Debug Options Window Help
Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b
it (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp
_hum.py
Temperature and Humidity is optimum
Temperature and Humidity is optimum
ALERT : Temperature is too Hot:26
>>>
```



```
temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)
File Edit Format Run Options Window Help
import random
def tempMonitor():
    min_temp=15
    max_temp=25
    min_hum=30
    max_hum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>min_temp)and(temp<=max_temp) and (humidity>min_hum) and (humidity<=max_hum)):
        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if(temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if(humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if(temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if(humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
tempMonitor()

IDLE Shell 3.8.7rc1
File Edit Shell Debug Options Window Help
Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b
it (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp
_hum.py
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature is too Cold:14
>>>
```

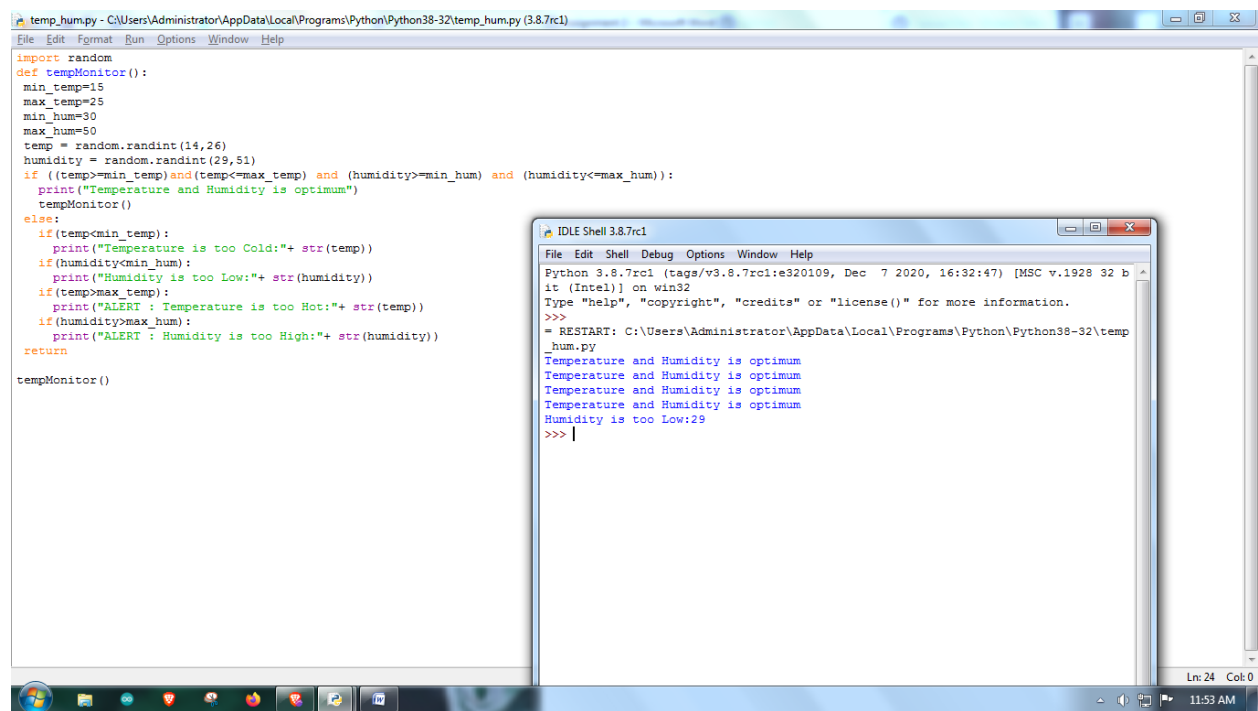


The screenshot shows a Python IDE window titled "temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)". The script defines a function `tempMonitor()` that generates random temperature and humidity values and prints messages based on their ranges. An `if` statement checks for optimal conditions, while `else` branches handle "too cold", "too low humidity", "too hot", and "too high humidity" scenarios. The `tempMonitor()` function is called at the bottom of the script.

An "IDLE Shell 3.8.7rc1" window is open, displaying the output of the script. It shows the restart path, followed by three "Temperature and Humidity is optimum" messages, and one "ALERT : Humidity is too High:51" message.

```
temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)
File Edit Format Run Options Window Help
import random
def tempMonitor():
    min_temp=15
    max_temp=25
    min_hum=30
    max_hum=50
    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>=min_temp)and(temp<=max_temp) and (humidity>=min_hum) and (humidity<=max_hum)):
        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if (temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if (humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if (temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if (humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
tempMonitor()

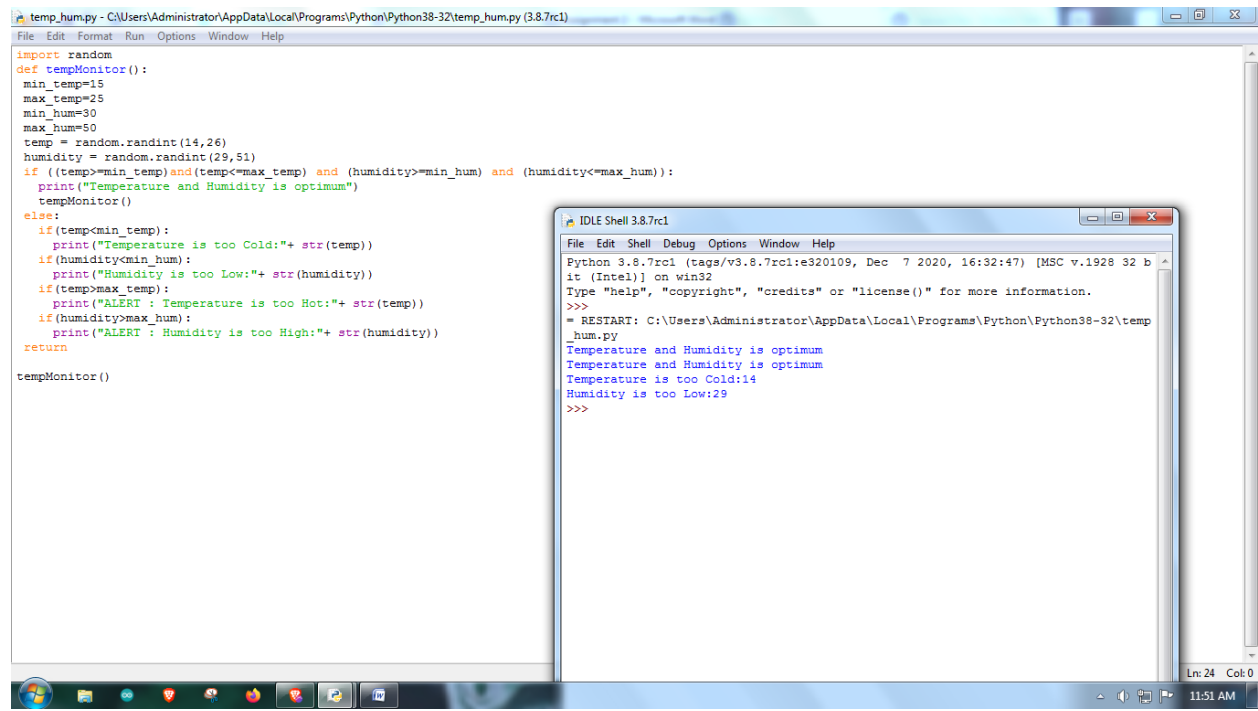
IDLE Shell 3.8.7rc1
File Edit Shell Debug Options Window Help
Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b
it (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp
_hum.py
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature and Humidity is optimum
ALERT : Humidity is too High:51
>>> |
```



This screenshot shows the same Python IDE window with the same script as above. The "IDLE Shell 3.8.7rc1" window displays a different set of outputs, including four "Temperature and Humidity is optimum" messages and one "Humidity is too Low:29" message.

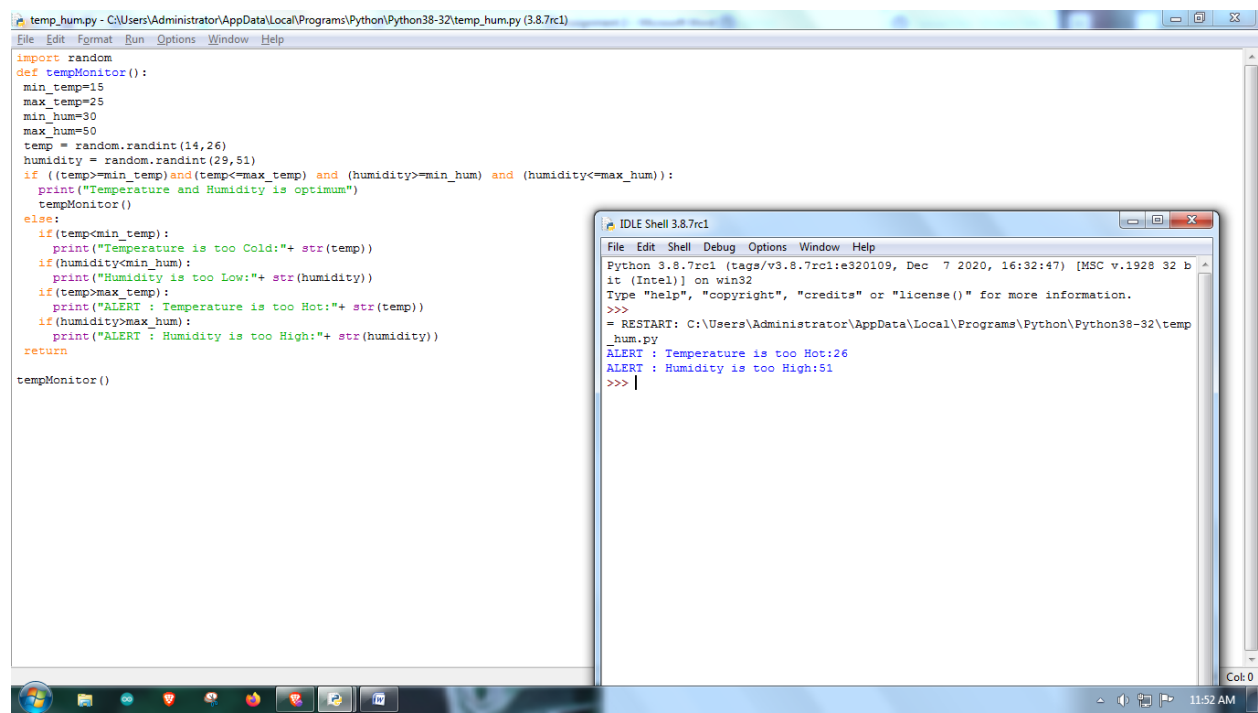
```
temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)
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    max_temp=25
    min_hum=30
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    temp = random.randint(14,26)
    humidity = random.randint(29,51)
    if ((temp>=min_temp)and(temp<=max_temp) and (humidity>=min_hum) and (humidity<=max_hum)):
        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if (temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if (humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if (temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if (humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
tempMonitor()

IDLE Shell 3.8.7rc1
File Edit Shell Debug Options Window Help
Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b
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>>>
= RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp
_hum.py
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Humidity is too Low:29
>>> |
```



```
temp_hum.py - C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py (3.8.7rc1)
File Edit Format Run Options Window Help
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        print("Temperature and Humidity is optimum")
        tempMonitor()
    else:
        if (temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if (humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if (temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if (humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
    return
tempMonitor()
```

Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b it (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> = RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py
Temperature and Humidity is optimum
Temperature and Humidity is optimum
Temperature is too Cold:14
Humidity is too Low:29
>>>



```
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        tempMonitor()
    else:
        if (temp<min_temp):
            print("Temperature is too Cold:"+ str(temp))
        if (humidity<min_hum):
            print("Humidity is too Low:"+ str(humidity))
        if (temp>max_temp):
            print("ALERT : Temperature is too Hot:"+ str(temp))
        if (humidity>max_hum):
            print("ALERT : Humidity is too High:"+ str(humidity))
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tempMonitor()
```

Python 3.8.7rc1 (tags/v3.8.7rc1:e320109, Dec 7 2020, 16:32:47) [MSC v.1928 32 b it (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> = RESTART: C:\Users\Administrator\AppData\Local\Programs\Python\Python38-32\temp_hum.py
ALERT : Temperature is too Hot:26
ALERT : Humidity is too High:51
>>> |

By
Dinakar S

