

ASSIGNMENT-2

Name: SRI HARI SUDHAN K

Topic: Assignment on temperature and humidity sensing and alarm automation using python

Code:

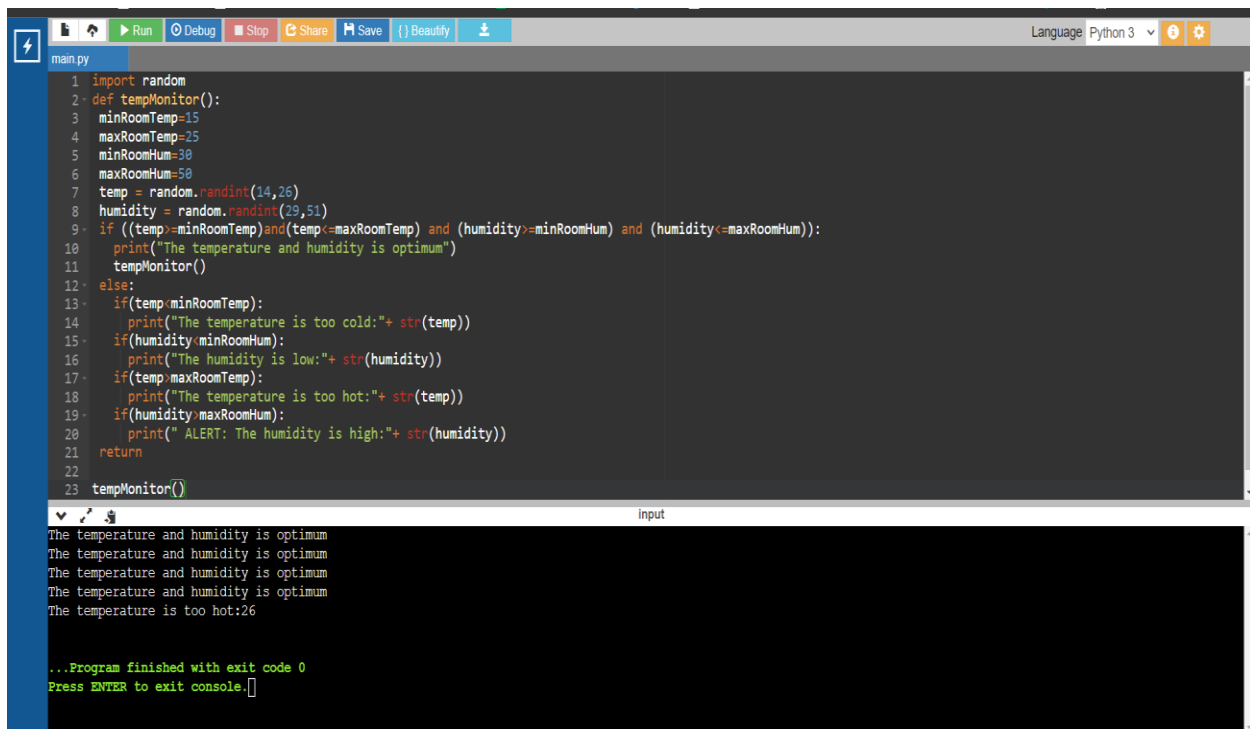
```
import random

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()
```

Output

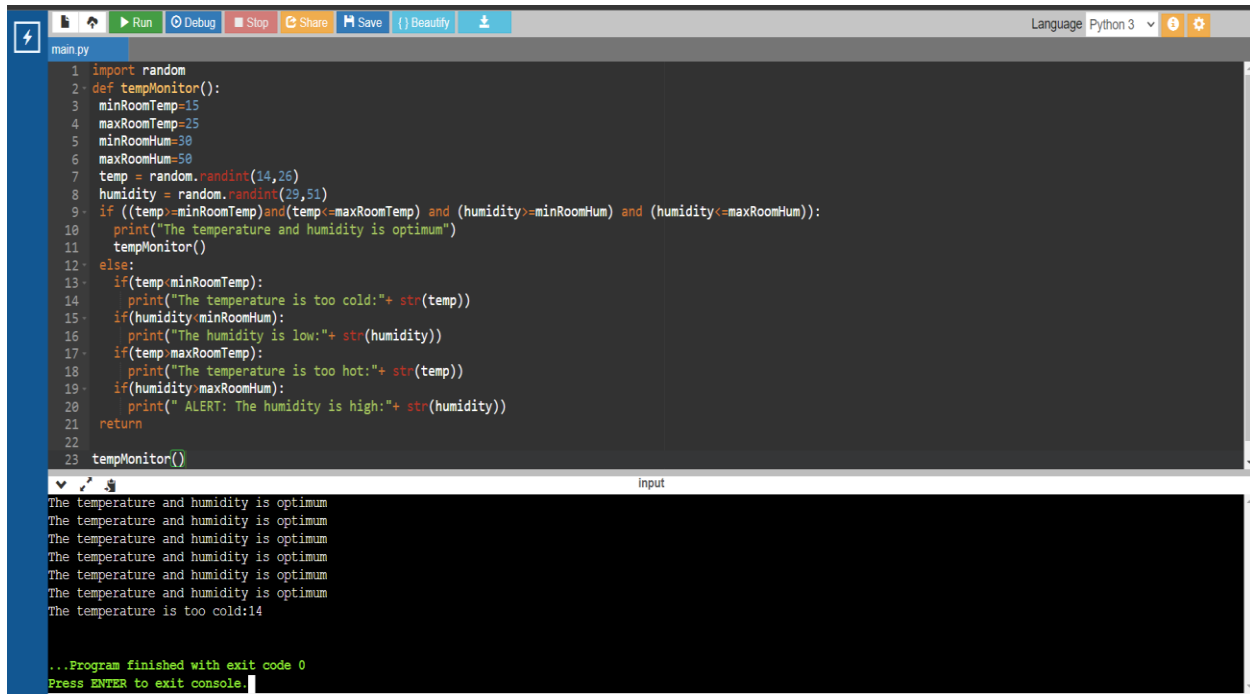


The screenshot shows a Python IDE with a file named 'main.py'. The code defines a function 'tempMonitor()' that generates random temperature and humidity values and checks them against predefined ranges. The output console shows five iterations of the function call, with the first four displaying 'The temperature and humidity is optimum' and the fifth displaying 'The temperature is too hot:26'.

```
1 import random
2 def tempMonitor():
3     minRoomTemp=15
4     maxRoomTemp=25
5     minRoomHum=30
6     maxRoomHum=50
7     temp = random.randint(14,26)
8     humidity = random.randint(29,51)
9     if ((temp >= minRoomTemp) and (temp <= maxRoomTemp) and (humidity >= minRoomHum) and (humidity <= maxRoomHum)):
10        print("The temperature and humidity is optimum")
11        tempMonitor()
12    else:
13        if(temp < minRoomTemp):
14            print("The temperature is too cold:" + str(temp))
15        if(humidity < minRoomHum):
16            print("The humidity is low:" + str(humidity))
17        if(temp > maxRoomTemp):
18            print("The temperature is too hot:" + str(temp))
19        if(humidity > maxRoomHum):
20            print(" ALERT: The humidity is high:" + str(humidity))
21    return
22
23 tempMonitor()
```

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

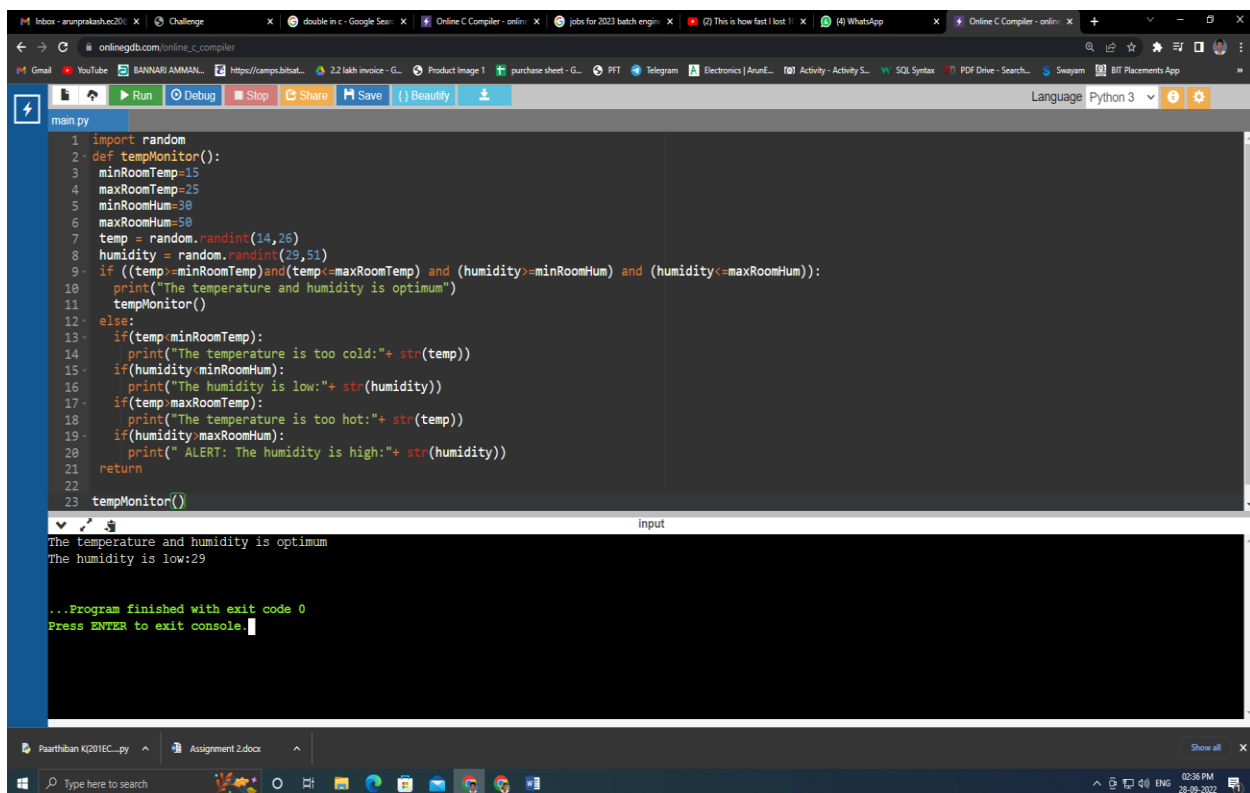
...Program finished with exit code 0
Press ENTER to exit console.



```
1 import random
2 def tempMonitor():
3     minRoomTemp=15
4     maxRoomTemp=25
5     minRoomHum=30
6     maxRoomHum=50
7     temp = random.randint(14,26)
8     humidity = random.randint(20,51)
9     if ((temp>=minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and (humidity<=maxRoomHum)):
10        print("The temperature and humidity is optimum")
11        tempMonitor()
12    else:
13        if(temp < minRoomTemp):
14            print("The temperature is too cold:"+ str(temp))
15        if(humidity < minRoomHum):
16            print("The humidity is low:"+ str(humidity))
17        if(temp > maxRoomTemp):
18            print("The temperature is too hot:"+ str(temp))
19        if(humidity > maxRoomHum):
20            print(" ALERT: The humidity is high:"+ str(humidity))
21    return
22
23 tempMonitor()
```

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

...Program finished with exit code 0
Press ENTER to exit console.



```
1 import random
2 def tempMonitor():
3     minRoomTemp=15
4     maxRoomTemp=25
5     minRoomHum=30
6     maxRoomHum=50
7     temp = random.randint(14,26)
8     humidity = random.randint(29,51)
9     if ((temp>=minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and (humidity<=maxRoomHum)):
10        print("The temperature and humidity is optimum")
11        tempMonitor()
12    else:
13        if(temp < minRoomTemp):
14            print("The temperature is too cold:"+ str(temp))
15        if(humidity < minRoomHum):
16            print("The humidity is low:"+ str(humidity))
17        if(temp > maxRoomTemp):
18            print("The temperature is too hot:"+ str(temp))
19        if(humidity > maxRoomHum):
20            print(" ALERT: The humidity is high:"+ str(humidity))
21    return
22
23 tempMonitor()
```

The temperature and humidity is optimum
The humidity is low:29

...Program finished with exit code 0
Press ENTER to exit console.

The screenshot shows a web browser window with an online Python compiler. The code defines a function `tempMonitor()` that generates random temperature and humidity values and checks them against predefined ranges. The output shows four 'optimum' messages followed by an 'ALERT' message for high humidity.

```
1 import random
2 def tempMonitor():
3     minRoomTemp=15
4     maxRoomTemp=25
5     minRoomHum=30
6     maxRoomHum=50
7     temp = random.randint(14,26)
8     humidity = random.randint(29,51)
9     if ((temp>=minRoomTemp)and(temp<=maxRoomTemp) and (humidity>=minRoomHum) and (humidity<=maxRoomHum)):
10        print("The temperature and humidity is optimum")
11        tempMonitor()
12    else:
13        if(temp<minRoomTemp):
14            print("The temperature is too cold:"+ str(temp))
15        if(humidity<minRoomHum):
16            print("The humidity is low:"+ str(humidity))
17        if(temp>maxRoomTemp):
18            print("The temperature is too hot:"+ str(temp))
19        if(humidity>maxRoomHum):
20            print(" ALERT: The humidity is high:"+ str(humidity))
21    return
22
23 tempMonitor()
```

The output window shows the following text:

```
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

...Program finished with exit code 0
Press ENTER to exit console.
```