ASSIGNMENT-2:

Detecting Temperature and Humidity Values

Done by

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ASSIGNMENT THEME:

Build python code, Generate Temperature and Humidity values (Use Random function to generate values) and write a condition to detect an alarm in case of high temperature and humidity.

For ex: Temperature is greater than 30C play alarm sound and same for humidity.

DESCRIPTION:

Here, in this assignment, we have two cases such as temperature and humidity values. Let us discuss about each cases.

CASE-1: (Temperature detection)

Instead of detecting the temperature value in surrounding environment, we use Random function to choose the temperature value randomly. The unit of Temperature is **Degree Celsius.** Here, I use the temperature ranges from -20 C to 50 C. it involves 3 category namely,

- When temperature is less than -5C, it indicates “COLD TEMPERATURE”.

- When temperature is ranges between -5C to 30C, it indicates “NORMAL TEMPERATURE”.
- When temperature is above 30C, it indicates “HIGH TEMPERATURE”.

Whenever the temperature value goes above 30C, the alarm makes Sound and warning will be provided through BEEP SOUND.

CASE-2: (Humidity detection)

Instead of detecting the humidity value in surrounding environment (like moisture content of air and soil), we use Random function to choose the humidity value randomly. The unit of humidity is **Percentage.** Here, I use the humidity value ranges from 30% to 80%. it also involves 3 category namely,

- When humidity is less than 55%, it indicates “DRY AND COMFORTABLE”.
- When humidity is ranges between 55% to 65%, it indicates “MODERATE HUMIDITY”.
- When humidity is greater than 65%, it indicates “HIGH HUMIDITY”.

Similar to Temperature warning, Whenever the humidity value goes above 65%, the alarm makes Sound and warning will be provided through BEEP SOUND.

SOFTWARE REQUIRED:

- **Python IDLE-3.7.0** - Installation
- Necessary modules (like importing random and winsound) for performing the given credentials.

CODING:

```
#ASSIGNMENT NO:2

#To Build Python code, Generate Temperature and humidity values (Using random function for generating those values) and write a condition to detect an alarm in case of high temperature and humidity...

#For generating random values, first we have to import the random module.

import random

#Similarly for creating an alarm to make sound, we importing the Beep method from winsound module.

from winsound import Beep

print("The temperature and humidity details:\n")

#Here, I use a for loop, for generating random values(temperature and humidity) upto 5 times.

for i in range(5):

    temperature=random.randint(-20,50)        #temperate value ranges from -20C to 50C

    humidity=random.randint(30,80)        #humidity value ranges from 30% to 80%


    #Case-1:(Temperature details)

    print("The Current Temperature is:",temperature,"C")       #Tempearture in

     degree Celcius (C)

    if(temperature>=30):

        print("High Temperature")

        print("Warning:BEEP")

        Beep(2000,5000)     #The alarm will produce a beep sound.

    elif(temperature<-5):
```

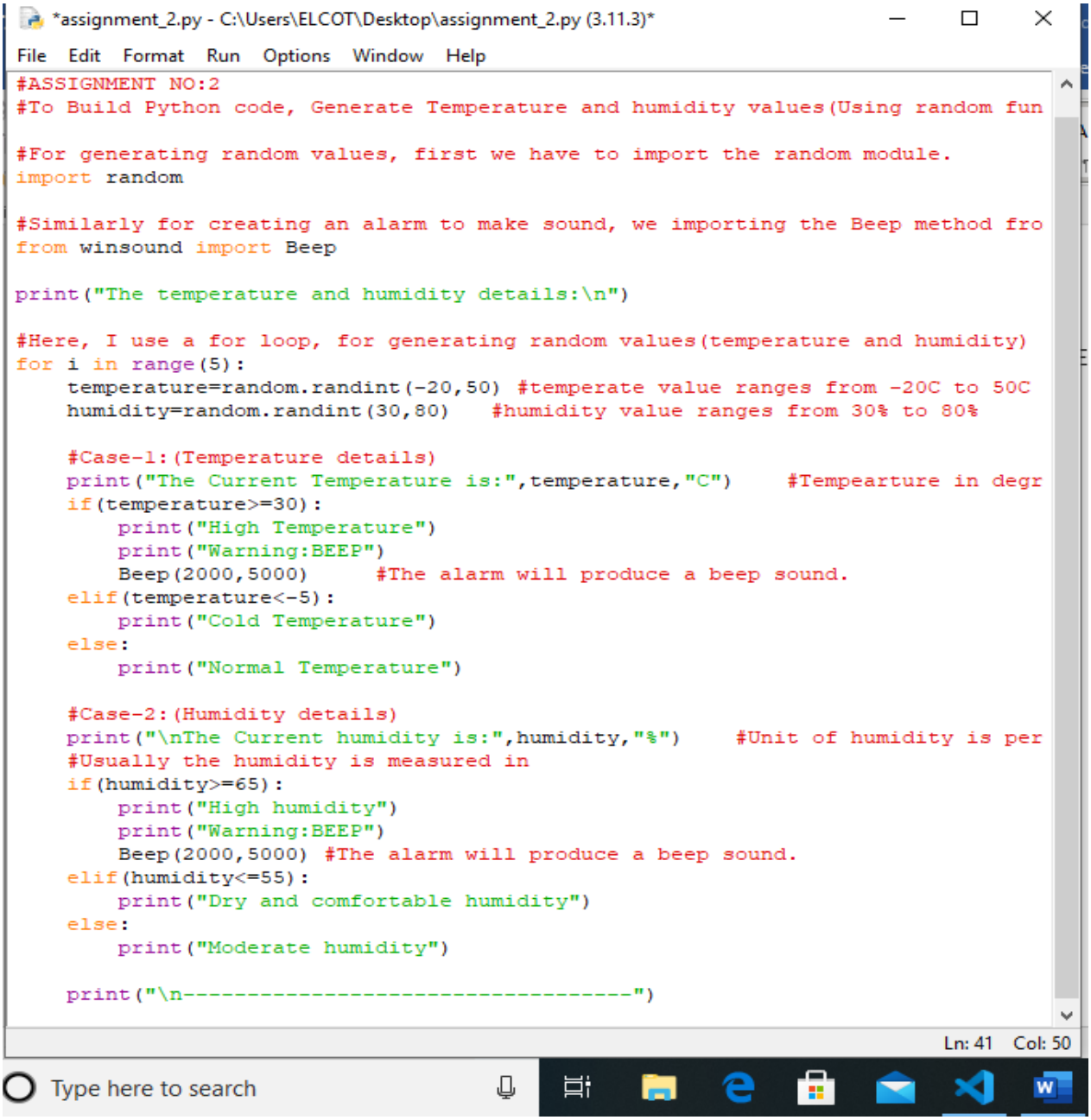
```
    print("Cold Temperature")
else:
    print("Normal Temperature")

#Case-2:(Humidity details)
print("\nThe Current humidity is:",humidity,"%")    #Unit of humidity is
percentage (%)
if(humidity>=65):
    print("High humidity")
    print("Warning:BEEP")
    Beep(2000,5000) #The alarm will produce a beep sound.
elif(humidity<=55):
    print("Dry and comfortable humidity")
else:
    print("Moderate humidity")

print("\n---------------------------------")
```

This is the source code of my assignment. Here both the case. (ie.,) Temperature and humidity values are generated randomly up to 5 times using for loop.

The Screenshots of this source codes are shown below for your reference and the output screenshots are also attached in this file.

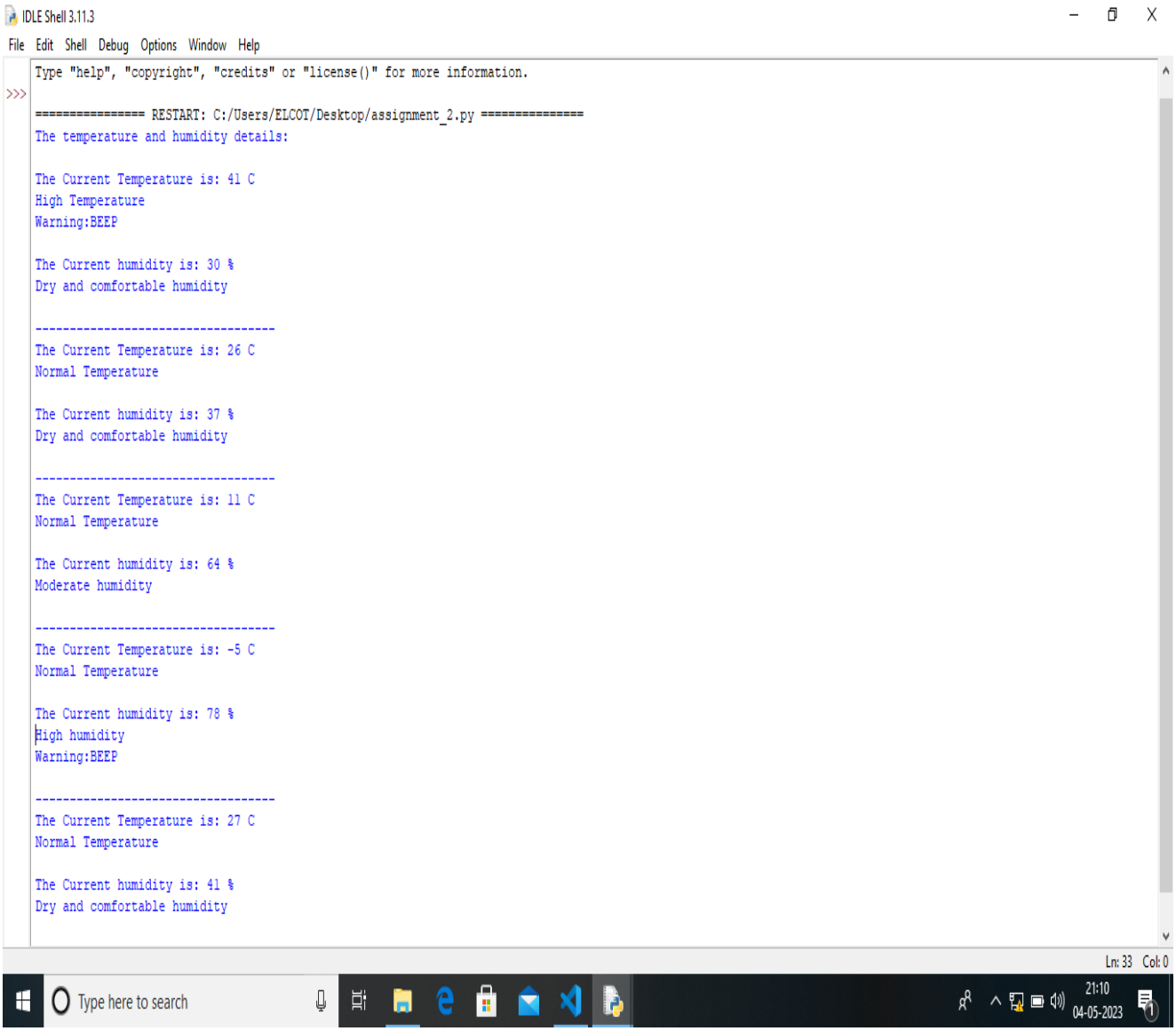
SOURCE CODE:

The Coding lines which I made for this assignment are shown in figure below.



OUTPUT:

The output of my assignment “TEMPERATURE AND HUMIDITY VALUE DETECTION” are shown below.



RESULT:

Thus, I have Successfully completed my assignment with all the given credentials for detecting the temperature and humidity values randomly and alarm will make a sound when high value occurs.