Assignment -2

Python Programming

Assignment Date	12 May 2023
Student Name	Bene sweety B
Student Roll Number	A3639CFDA62F05DA3EF40F0E5650BF8C
Team ID	NM2023TMID03571

Question-1:

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 high Humidity.

Solution:

```
import random
import time
import winsound

TEMP_THRESHOLD_HIGH = 30
HUMIDITY_THRESHOLD_HIGH = 30
TEMP_THRESHOLD_LOW = 20
HUMIDITY_THRESHOLD_LOW = 20

while True:
 temperature = random.uniform(10, 60)
 humidity = random.uniform(10, 60)

 if temperature > TEMP_THRESHOLD_HIGH:
 print("High temperature detected! Temperature = %.1f C" % temperature)
frequency = 2500
 duration = 1000
 winsound.Beep(frequency, duration)
 elif temperature < TEMP_THRESHOLD_LOW:
 print("Low temperature detected! Temperature = %.1f C" % temperature)
frequency = 1000
 duration = 500
```

winsound.Beep(frequency, duration)

if humidity > HUMIDITY_THRESHOLD_HIGH:

print("High humidity detected! Humidity = %.1f %%" % humidity)

frequency = 2000

duration = 2000

winsound.Beep(frequency, duration)

elif humidity < HUMIDITY_THRESHOLD_LOW:

print("Low humidity detected! Humidity = %.1f %%" % humidity)

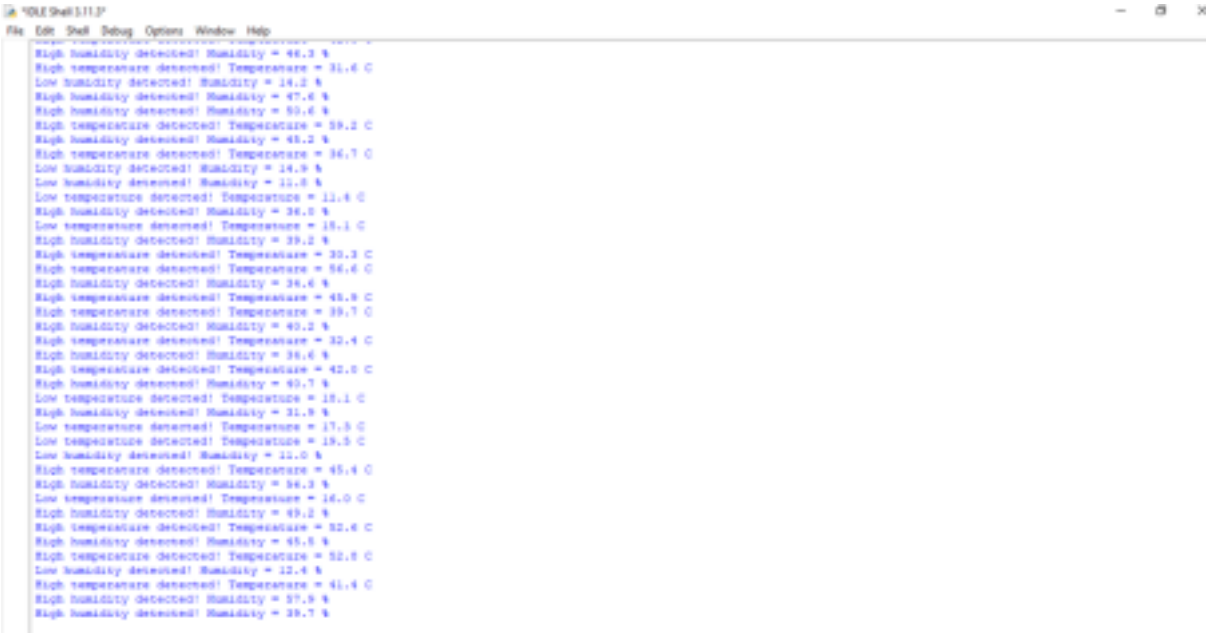
frequency = 1500

duration = 500

winsound.Beep(frequency, duration)

time.sleep(5)

OUTPUT:


IDLE Shell 3.11.3
File Edit Shell Debug Options Window Help
High humidity detected! Humidity = 46.3 %
High temperature detected! Temperature = 31.6 C
Low humidity detected! Humidity = 14.2 %
High humidity detected! Humidity = 47.6 %
High humidity detected! Humidity = 50.6 %
High temperature detected! Temperature = 39.2 C
High humidity detected! Humidity = 45.2 %
High temperature detected! Temperature = 36.7 C
Low humidity detected! Humidity = 14.9 %
Low humidity detected! Humidity = 11.8 %
Low temperature detected! Temperature = 11.4 C
High humidity detected! Humidity = 36.0 %
Low temperature detected! Temperature = 15.1 C
High humidity detected! Humidity = 39.2 %
High temperature detected! Temperature = 30.3 C
High temperature detected! Temperature = 56.6 C
High humidity detected! Humidity = 34.6 %
High temperature detected! Temperature = 45.9 C
High temperature detected! Temperature = 39.7 C
High humidity detected! Humidity = 40.2 %
High temperature detected! Temperature = 32.4 C
High humidity detected! Humidity = 34.6 %
High temperature detected! Temperature = 42.0 C
High humidity detected! Humidity = 40.7 %
Low temperature detected! Temperature = 15.1 C
High humidity detected! Humidity = 31.9 %
Low temperature detected! Temperature = 17.5 C
Low temperature detected! Temperature = 19.5 C
Low humidity detected! Humidity = 11.0 %
High temperature detected! Temperature = 45.4 C
High humidity detected! Humidity = 56.3 %
Low temperature detected! Temperature = 16.0 C
High humidity detected! Humidity = 49.2 %
High temperature detected! Temperature = 32.6 C
High humidity detected! Humidity = 45.5 %
High temperature detected! Temperature = 52.8 C
Low humidity detected! Humidity = 12.4 %
High temperature detected! Temperature = 41.4 C
High humidity detected! Humidity = 57.9 %
High humidity detected! Humidity = 39.7 %