

IBM

ASSIGNMENT 2

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PYTHON CODE:

```
import time

import Adafruit_DHT

DHT_READ_TIMEOUT = 5

DHT_DATA_PIN = 26

ADAFRUIT_IO_KEY = 'YOUR_AIO_KEY'

ADAFRUIT_IO_USERNAME = 'YOUR_AIO_USERNAME'

aio = Client(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)

temperature_feed = aio.feeds('temperature')

humidity_feed = aio.feeds('humidity')

dht22_sensor = Adafruit_DHT.DHT22

while True:

    humidity, temperature = Adafruit_DHT.read_retry(dht22_sensor, DHT_DATA_PIN)

    if humidity is not None and temperature is not None:

        print('Temp={0:0.1f}*C Humidity={1:0.1f}%'.format(temperature, humidity))

        temperature = '%.2f'%(temperature)

        humidity = '%.2f'%(humidity)

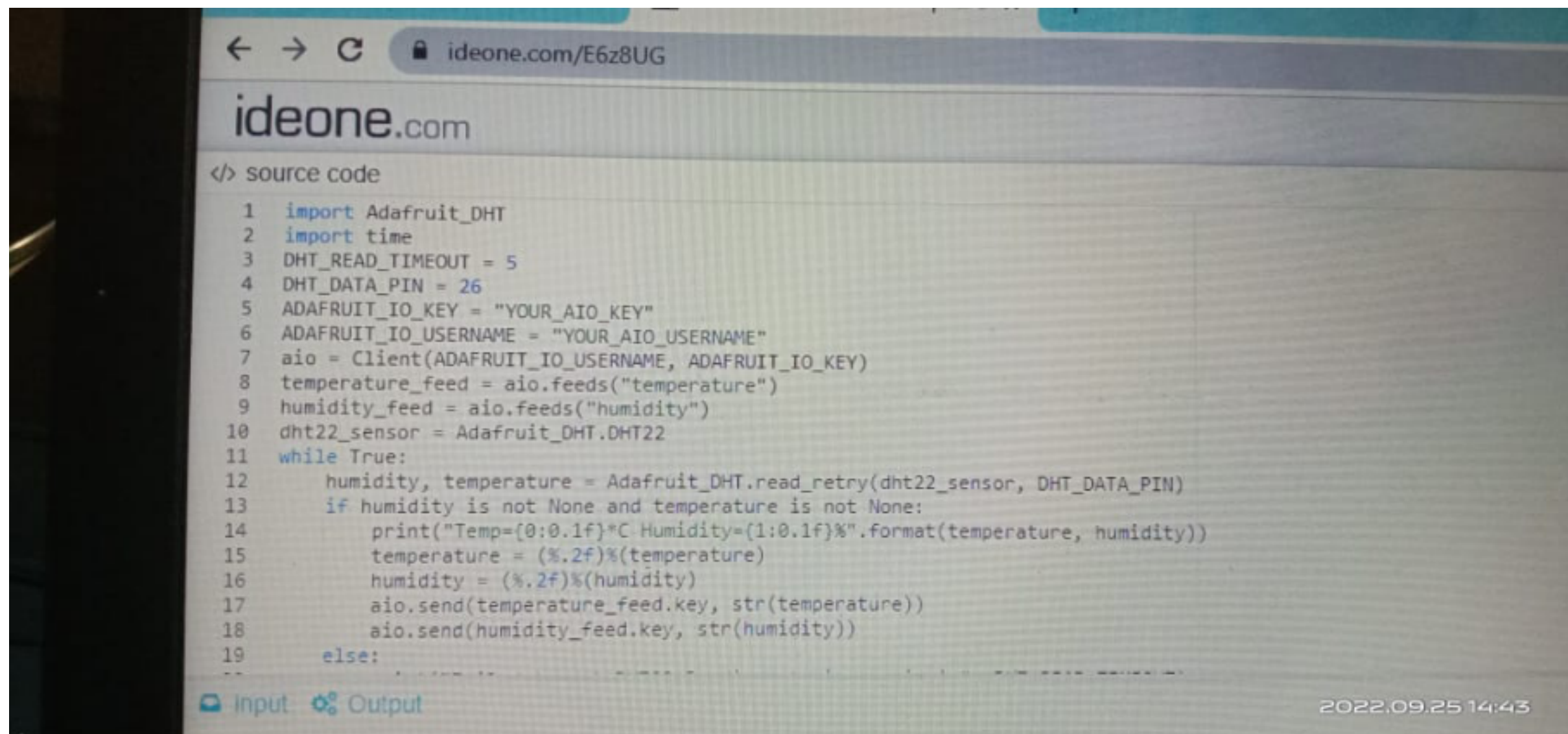
        aio.send(temperature_feed.key, str(temperature))

        aio.send(humidity_feed.key, str(humidity))

    else:
```

```
print('Failed to get DHT22 Reading, trying again in ', DHT_READ_TIMEOUT, 'seconds')  
time.sleep(DHT_READ_TIMEOUT)
```

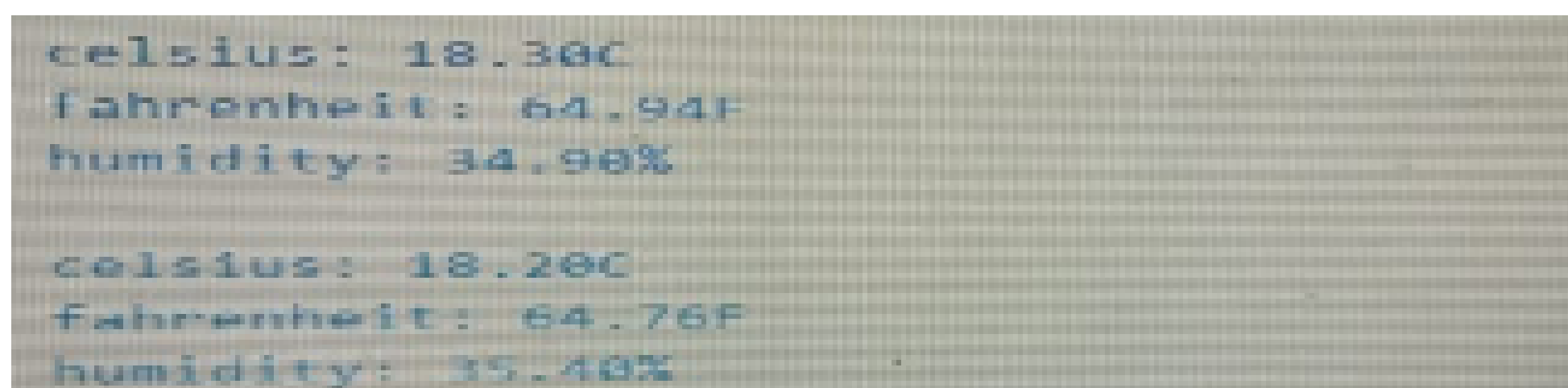
OUTPUT:



The screenshot shows the IDEONE website interface. The browser address bar displays 'ideone.com/E6z8UG'. The page title is 'ideone.com'. Below the title, there is a tab labeled '</> source code'. The main area contains Python code for reading data from a DHT22 sensor using the Adafruit_DHT library and sending the data to the Adafruit IO service. The code includes imports for the library and time, defines constants for the read timeout and data pin, sets up the Adafruit IO client with a key and username, creates feeds for temperature and humidity, initializes the DHT22 sensor, and enters a while loop that reads the sensor data, formats it, and sends it to the feeds. At the bottom of the IDEONE interface, there are tabs for 'Input' and 'Output', and a timestamp '2022.09.25 14:43'.

```
</> source code  
1 import Adafruit_DHT  
2 import time  
3 DHT_READ_TIMEOUT = 5  
4 DHT_DATA_PIN = 26  
5 ADAFRUIT_IO_KEY = "YOUR_AIO_KEY"  
6 ADAFRUIT_IO_USERNAME = "YOUR_AIO_USERNAME"  
7 aio = Client(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)  
8 temperature_feed = aio.feeds("temperature")  
9 humidity_feed = aio.feeds("humidity")  
10 dht22_sensor = Adafruit_DHT.DHT22  
11 while True:  
12     humidity, temperature = Adafruit_DHT.read_retry(dht22_sensor, DHT_DATA_PIN)  
13     if humidity is not None and temperature is not None:  
14         print("Temp={0:0.1f}*C Humidity={1:0.1f}%".format(temperature, humidity))  
15         temperature = (0.2f)(temperature)  
16         humidity = (0.2f)(humidity)  
17         aio.send(temperature_feed.key, str(temperature))  
18         aio.send(humidity_feed.key, str(humidity))  
19     else:  
20         print("Failed to read sensor data, retrying...")  
21         time.sleep(DHT_READ_TIMEOUT)
```

Input Output 2022.09.25 14:43



The screenshot shows the output of the Python code. It displays two sets of readings. The first set shows a temperature of 18.30C, 64.94F, and a humidity of 34.98%. The second set shows a temperature of 18.20C, 64.76F, and a humidity of 35.40%.

```
celsius: 18.30C  
fahrenheit: 64.94F  
humidity: 34.98%  
  
celsius: 18.20C  
fahrenheit: 64.76F  
humidity: 35.40%
```

Line chart update fromADAFRUIT IO:

DHT22

