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import json
import requests
from datetime import datetime

# Fetching data from the API and parsing
result =
requests.get("https://samples.openweathermap.org/data/2.5/forecast/hourly
?q=London,us&appid=b6907d289e10d714a6e88b30761fae22")
jsonData = result.text
parsedData = json.loads(jsonData)

# Is the response contains 4 days of data
def isFourDaysDataAvailable():
    firstDateTimeStr = parsedData["list"][0]["dt_txt"]
    lastDateTimeStr = parsedData["list"][-1]["dt_txt"]
    firstDateTimeObj = datetime.strptime(firstDateTimeStr, "%Y-%m-%d
%H:%M:%S")
    lastDateTimeObj = datetime.strptime(lastDateTimeStr, "%Y-%m-%d
%H:%M:%S")
    timeDelta = lastDateTimeObj-firstDateTimeObj
    days = timeDelta.days
    hours = timeDelta.seconds//3600
    if(days == 3 and hours == 23):
        print("\nTest SUCCESS::: 4 Days Data Available")
    else:
        print("\nTest FAILED::: 4 Days Data Not Available")

# Is all the forecast in the hourly interval ( no hour should be missed )
def isAllForcastHourly():
    for index in range(1, len(parsedData["list"])):
        FC1 = datetime.strptime(parsedData["list"][index-1]["dt_txt"],
"%Y-%m-%d %H:%M:%S")
        FC2 = datetime.strptime(parsedData["list"][index]["dt_txt"], "%Y-
%m-%d %H:%M:%S")
        if(((FC2-FC1).seconds//3600) != 1):
            print("\nTest FAILED::: Hourly Forecast is Not Available")
            return
    print("\nTest SUCCESS::: Hourly Forecast is Available")

# For all 4 days, the temp should not be less than temp_min and not more
than temp_max
def isTempBetweenMinMax():
    for FC in parsedData["list"]:
        temp = FC["main"]["temp"]
        if(temp<FC["main"]["temp_min"] or temp>FC["main"]["temp_max"]):
            print("\nTest FAILED::: Temp is not in range of temp_min and
temp_max")
            return
    print("\nTest SUCCESS::: Temp is in range of temp_min and temp_max")

# This is a generic function to check the weather id and the
corresponding description
def checkWeatherDescWithId(id, desc):
    for FC in parsedData["list"]:
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        if(FC["weather"][0]["id"] == id):
            if(FC["weather"][0]["description"] != desc):
                print("\nTest FAILED::: The description of weather id ",
id, "is ", FC["weather"][0]["description"])
                return
    print("\nTest SUCCESS::: The description of weather id ", id, "is ",
desc, " in all cases")

# Calling the 5 test cases
isFourDaysDataAvailable()
isAllForcastHourly()
isTempBetweenMinMax()
checkWeatherDescWithId(500,"light rain")
checkWeatherDescWithId(800,"clear sky")
```