githubnatweatherserv

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class NatWeatherServ:

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This is a class that scrapes, formats, and writes forecast information from National Weather Service API to MongoDB. The forecast information is a hourly forecast for next 24 hours and daily forecast for next seven days from point of collection.

NatWeatherServ()

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This is the constructor for the class. There are several global variables:

sevendayminmaxprecip - list of dictionaries, each including the date of forecast, time collected, minimum temperature, maximum temperature, and precipitation probability for the next seven days.

sevendaydescr - list of dictionaries, each including the date of forecast, time collected, and short description of weather

sevendayforecast - list of sevendayminmaxprecip and sevendaydescr merged to create individual dictionaries per day with all information

timecollected - the time at which the class is called - the time is formatted using methods below

def JsonFile(self, link):

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JsonFile method is for converting a link to an API, passed as a parameter, into a JSON file. The method returns the JSON file.

def convertdate(self, date):

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Convertdate method is for converting the date, passed as a parameter, into a standard and more user-friendly format. The method returns the date as a string.

def converttime(self, time):

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Converttime method is for converting time, passed as a parameter, into a standard and more user-friendly format. The method returns the time as a string.

def formattemp(self, temp): View Source

Formattemp method is for converting temperature, passed as a parameter, in Celsius to Fahrenheit. The method returns the temperature in Farenheit as an integer.

def convertkeysandvals(self, dictlist, newkey1, newkey2): View Source

This method is for converting keys and values from the API that provided minimum temperature, maximum temperature, and precipitation probability into a standardized and more user-friendly appearance. The parameters passed to convertkeysandvals are the dictionary list that needs conversion as well as the new keys that each dictionary will be converted to. Each dictionary list has elements that are dictionaries with only two keys each: date and forecast data topic. The values of these keys are formatted accordingly within the method as well. The parameter passed, dictlist, is updated within the method and then returned.

def hourly(self, URL, collectionname): View Source

Hourly method is for scraping, formatting, and writing to MongoDB the hourly forecast data. The parameters passed are the URL and collection name used to successfully write into MongoDB.

def sevendayforecastfunc(self, URL, collectionname): View Source

This method is for initiating another method (sevendaysplit) for the collection of the minimum temperature, maximum temperature, and preciptation probability for the next seven days, as well as initiating another method (descr) for the description of forecast for the next seven days. This method then merges the information from two separate APIs into one list of dictionaries, sevendayforecast, which is then written to MongoDB. The parameters passed are the URL and collection name used to successfully write into MongoDB.

def sevendaysplit(self, link): View Source

This method is for scraping the seven day forecast information for the minimum temperature, maximum temperature, and precipitation probability. The parameter passed is the link to the API for the aforementioned information. After the information is scraped, the code will format the keys and values to be more user-friendly. For precipitation probability, the code compiles the projected probabilities given from the API per day and creates an average probability for the day. Each separate list of dictionaries per topic (minimum

temperature, maximum temperature, and precipitation probability) is then merged into one comprehensive list.

def descr(self, link): View Source

This method is for scraping, formatting, and appending the sevendaydescr list for the forecast description for the next seven days. The parameter passed is the link to the API that has forecast description data.

def mongo(self, URL): View Source

This method is for connecting a client to MongoDB, the shared database. The parameter passed is the URL to the cluster in MongoDB. The client connection is returned.

def mongohourly(self, URL, collectionname): View Source

This method is for writing the hourly forecast data into MongoDB. The parameters passed are the URL to the cluster in MongoDB and the collection name of the database.

def mongodaily(self, URL, collectionname): View Source

This method is for writing the daily forecast data into MongoDB. The parameters passed are the URL to the cluster in MongoDB and the collection name of the database.