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IST 652, Week 7

Activity 7.5: MongoDB and JSON

Code:

﻿'''

This program accesses the USGS earthquake data feed. This URL is for

significant quakes in the last 30 days.

It then saves the earthquakes to a database named usgs and a collection called earthquakes.

The mongod server must be running for this program to work!

'''

import urllib.request

import json

import pymongo

# get the bbc rss feed of news stories and connect to it

earthquake\_url = "http://earthquake.usgs.gov/earthquakes/feed/v1.0/summary/significant\_month.geojson"

try:

response = urllib.request.urlopen(earthquake\_url)

except urllib.error.URLError as e:

if hasattr(e, 'reason'):

print('We failed to reach a server.')

print('Reason: ', e.reason)

elif hasattr(e, 'code'):

print('The server couldn\'t fulfill the request.')

print('Error code: ', e.code)

else:

# the url request was successful - convert the response to a string

json\_string = response.read().decode('utf-8')

# the json package loads() converts the string to python dictionaries and lists

eq\_json = json.loads(json\_string)

# from the json dictionary we get the title to print

title = eq\_json['metadata']['title']

print('Collected data from', title)

# and we get the list of earthquakes

quakelist = eq\_json['features']

# Connection to Mongo DB

try:

client=pymongo.MongoClient('localhost', 27017)

print ("Connected successfully!!!")

except pymongo.errors.ConnectionFailure as e:

print ("Could not connect to MongoDB: %s" % e )

else:

# use database named usgs or create it if not there already

eqdb = client.usgs

# create collection named earthquakes or create it if not there already

quakecoll = eqdb.earthquakes

# add all the earthquakes to the list

quakecoll.insert\_many(quakelist)

print("Added", len(quakelist), "to earthquakes collection in usgs database")

# close the database connection

client.close()

**# Added for Part B**

**# quakecoll is the earthquake collection**

**# I could not decipher the date format to properly convert it :(**

**quakes = quakecoll.find()**

**for quake in quakes:**

**props = quake.get('properties')**

**place = props.get('place')**

**time = props.get('time')**

**# convert time from its current format to something else???**

**print("Quake Location: ", place, ", Time: ", time)**

Output:

﻿﻿﻿﻿Quake Location: 173km SSE of Lata, Solomon Islands , Time: 1589323272954

Quake Location: 17km SE of Ocotillo Wells, CA , Time: 1589148460370

Quake Location: 205km NW of Saumlaki, Indonesia , Time: 1588773236960

Quake Location: 89km S of Ierapetra, Greece , Time: 1588423866662

Quake Location: 6km S of Tallaboa, Puerto Rico , Time: 1588417998680

Quake Location: 132km W of Panguna, Papua New Guinea , Time: 1587783185839

Quake Location: 1km S of View Park-Windsor Hills, CA , Time: 1587539027740

Quake Location: 25km SE of Ofunato, Japan , Time: 1587328745984

Quake Location: 206km W of Chichi-shima, Japan , Time: 1587198337081

Quake Location: 4km NE of Magna, Utah , Time: 1587044489470

Quake Location: 38km ESE of Falam, Burma , Time: 1587037523956

Quake Location: 55km NNE of Savannah Bight, Honduras , Time: 1587024277597

Quake Location: 3km ENE of Magna, Utah , Time: 1586919369370