

1. Extract data from REST API

Jupyter REST API

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In [1]:

```
import json
import requests
import time
import urllib.parse

output = []
def download_civic_api(file_input):
    with open(file_input, 'r') as file_input:
        text_input = file_input.read()

    states = json.loads(text_input)

    key='AIZAxyAxIYBT0yJL0MiwDKaeFFWasixJhTLZIQK'
    API_ENDPOINT = 'https://www.googleapis.com/civinfo/v2/representatives?address={}&key={}'

    for state in states:
        req = requests.get(API_ENDPOINT.format(urllib.parse.quote(state['name']), key))

        state_officials=req.json()

        try:
            for office in state_officials.get('offices'):
                if office['name'] == "Governor of {}".format(state['name']):
                    index = office['officialIndices'][0]
                    time.sleep(1)
                    output.append({'State':state['abbreviation'], 'Governor':state_officials.get('officials')[index]['name']} )
                    time.sleep(1)

        except:
            print(state['name'], 'has no governor')

    print("Total States: ", len(output))
    print(output)

download_civic_api('states_titlecase.json')
```

American Samoa has no governor
Federated States Of Micronesia has no governor
Guam has no governor
Marshall Islands has no governor
Northern Mariana Islands has no governor
Palau has no governor
Puerto Rico has no governor
Virgin Islands has no governor
Total States: 50
[{'State': 'AL', 'Governor': 'Kay Ivey'}, {'State': 'AK', 'Governor': 'Mike Dunleavy'}, {'State': 'AZ', 'Governor': 'Doug Ducey'}, {'State': 'AR', 'Governor': 'Asa Hutchinson'}, {'State': 'CA', 'Governor': 'Gavin Newsom'}, {'State': 'CO', 'Governor': 'Jared Polis'}, {'State': 'CT', 'Governor': 'Ned Lamont'}, {'State': 'DE', 'Governor': 'John Carney'}, {'State': 'FL', 'Governor': 'Ron DeSantis'}, {'State': 'GA', 'Governor': 'Brian Kemp'}, {'State': 'HI', 'Governor': 'David Ige'}, {'State': 'ID', 'Governor': 'Brad Little'}, {'State': 'IL', 'Governor': 'J.B. Pritzker'}, {'State': 'IN', 'Governor': 'Eric J. Holcomb'}, {'State': 'IA', 'Governor': 'Kim Reynolds'}, {'State': 'KS', 'Governor': 'Laura Kelly'}, {'State': 'KY', 'Governor': 'Andy Beshear'}, {'State': 'LA', 'Governor': 'John Bel Edwards'}, {'State': 'ME', 'Governor': 'Janet Mills'}, {'State': 'MD', 'Governor': 'Larry Hogan'}, {'State': 'MA', 'Governor': 'Charlie Baker'}, {'State': 'MI', 'Governor': 'Gretchen Whitmer'}, {'State': 'MN', 'Governor': 'Tim Walz'}, {'State': 'MS', 'Governor': 'Tate Reeves'}, {'State': 'MO', 'Governor': 'Michael L. Parson'}, {'State': 'MT', 'Governor': 'Greg Gianforte'}, {'State': 'NE', 'Governor': 'Pete Ricketts'}, {'State': 'NV', 'Governor': 'Steve Sisolak'}, {'State': 'NH', 'Governor': 'Chris Sununu'}, {'State': 'NJ', 'Governor': 'Phil Murphy'}, {'State': 'NM', 'Governor': 'Michelle Lujan Grisham'}, {'State': 'NY', 'Governor': 'Andrew M. Cuomo'}, {'State': 'NC', 'Governor': 'Roy Cooper'}, {'State': 'ND', 'Governor': 'Doug Burgum'}, {'State': 'OH', 'Governor': 'Mike DeWine'}, {'State': 'OK', 'Governor': 'Kevin Stitt'}, {'State': 'OR', 'Governor': 'Kate Brown'}, {'State': 'PA', 'Governor': 'Tom Wolf'}, {'State': 'RI', 'Governor': 'Daniel J. McKee'}, {'State': 'SC', 'Governor': 'Henry McMaster'}, {'State': 'SD', 'Governor': 'Kristi Noem'}, {'State': 'TN', 'Governor': 'Bill Lee'}, {'State': 'TX', 'Governor': 'Greg Abbott'}, {'State': 'UT', 'Governor': 'Spencer J. Cox'}, {'State': 'VT', 'Governor': 'Phil Scott'}, {'State': 'VA', 'Governor': 'Ralph S. Northam'}, {'State': 'WA', 'Governor': 'Jay Inslee'}, {'State': 'WV', 'Governor': 'Jim Justice'}, {'State': 'WI', 'Governor': 'Tony Evers'}, {'State': 'WY', 'Governor': 'Mark Gordon'}]

2. Transform Text Data to Dataframe and csv

```
In [2]: 1 import collections
2 import pandas as pd
3
4 states_data = collections.defaultdict(list)
5
6 for out in output:
7     states_data["State"].append(out["State"])
8     states_data["Governor"].append(out["Governor"])
9
10 df = pd.DataFrame(dict(states_data), columns=["State", "Governor"]).sort_index(by="State")
11 print(df)
12 df.to_csv('states_info.csv', index = False)
```

	State	Governor
1	AK	Mike Dunleavy
0	AL	Kay Ivey
3	AR	Asa Hutchinson
2	AZ	Doug Ducey
4	CA	Gavin Newsom
5	CO	Jared Polis
6	CT	Ned Lamont
7	DE	John Carney
8	FL	Ron DeSantis
9	GA	Brian Kemp
10	HI	David Ige
14	IA	Kim Reynolds
11	ID	Brad Little
12	IL	J.B. Pritzker
13	IN	Eric J. Holcomb
15	KS	Laura Kelly
16	KY	Andy Beshear
17	LA	John Bel Edwards
20	MA	Charlie Baker
19	MD	Larry Hogan
18	ME	Janet Mills
21	MI	Gretchen Whitmer
22	MN	Tim Walz
24	MO	Michael L. Parson
23	MS	Tate Reeves
25	MT	Greg Gianforte
32	NC	Roy Cooper
33	ND	Doug Burgum
26	NE	Pete Ricketts
28	NH	Chris Sununu
29	NJ	Phil Murphy
30	NM	Michelle Lujan Grisham
27	NV	Steve Sisolak
31	NY	Andrew M. Cuomo
34	OH	Mike DeWine
35	OK	Kevin Stitt
36	OR	Kate Brown
37	PA	Tom Wolf
38	RI	Daniel J. McKee
39	SC	Henry McMaster
40	SD	Kristi Noem
41	TN	Bill Lee
42	TX	Greg Abbott
43	UT	Spencer J. Cox
45	VA	Ralph S. Northam
44	VT	Phil Scott
46	WA	Jay Inslee
48	WI	Tony Evers
47	WV	Jim Justice
49	WY	Mark Gordon

3. Parameterized query for API

```
In [3]: 1 def parametric_civic_api(address, includeOffices, roles):
2
3     key='AIzaSyAxIYBT0yJL0MiWDKaeFFWas1xJhTLzIQk'
4     API_ENDPOINT = 'https://www.googleapis.com/civicinfo/v2/representatives?address={}&includeOffices={}&roles={}&'
5
6     req = requests.get(API_ENDPOINT.format(address, includeOffices, roles, key))
7     output = req.json()
8
9     for office in output.get('offices'):
10         if office['levels'][0] == 'administrativeAreal' and office['roles'][0] == roles:
11             index = office['officialIndices'][0]
12             time.sleep(1)
13             print('Name:{}, Phones:{}, urls:{}'.format(output.get('officials')[index]['name'], output.get('officials')[index]['phones'], output.get('officials')[index]['urls']))
14
15
16
17 parametric_civic_api('3155 Frontera Way Burlingame California', 'true', 'deputyHeadOfGovernment')

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