

Host
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Focus: #DataDev

Connecting to APIs in Tableau Desktop using Python and TabPy



Find out more on Meetup!
<http://til.bi/talkdata>

Connecting to Restcountries API

Selected country

United Kingdom

Capital

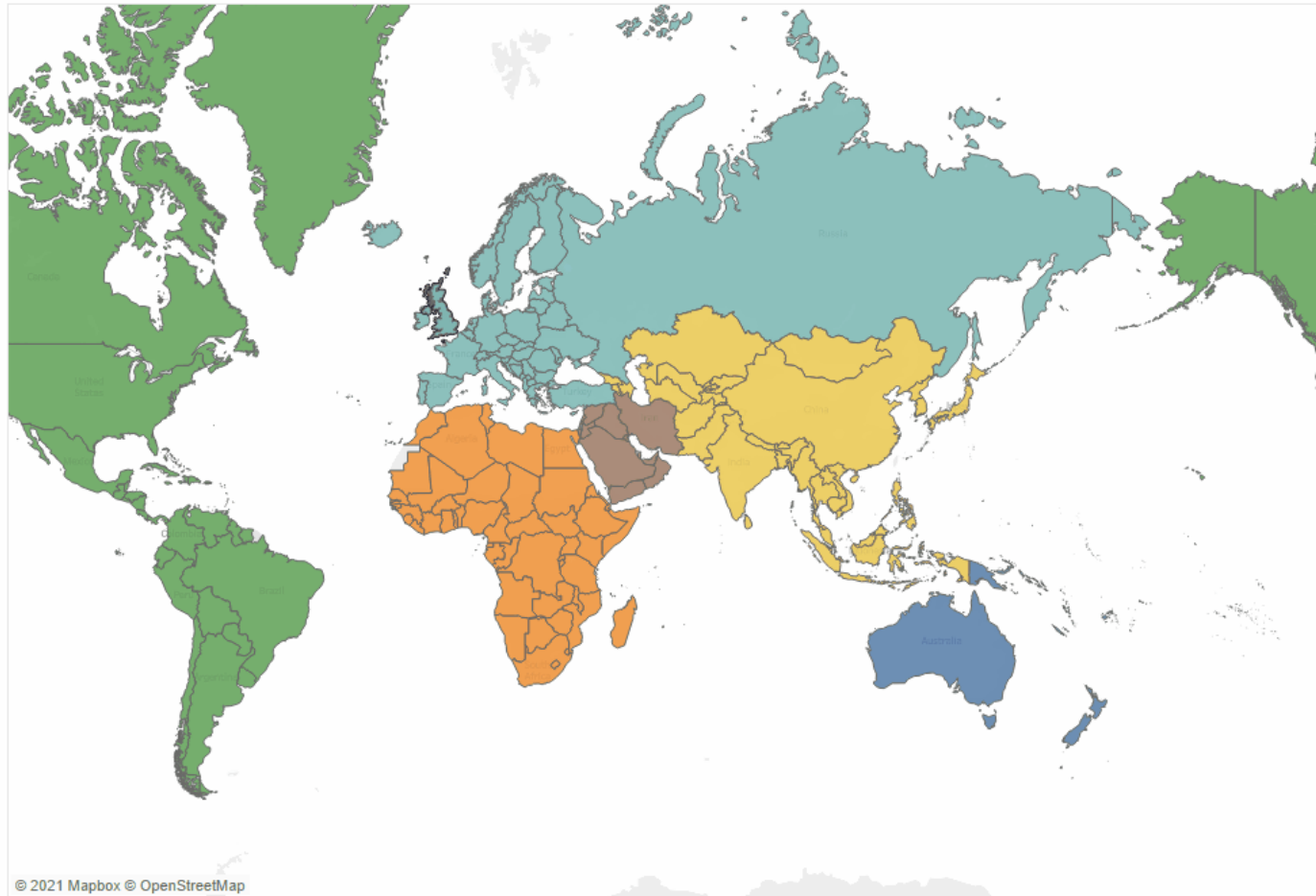
London

Country area

242,900

Subregion

Northern Europe



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Region

Africa

Asia

Europe

Middle East

Oceania

The Americas

What is an **API**?



Client application

API

Server

Data formats when working with APIs

XML – Extensible markup language

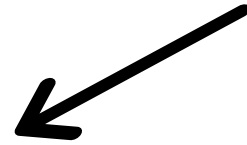
JSON – JavaScript Object Notation

The example of the response in JSON format on the right shows that the data is stored in **name** and **value** pairs.

```
1  {
2    "name": "Colombia",
3    "topLevelDomain": [
4      ".co"
5    ],
6    "alpha2Code": "CO",
7    "alpha3Code": "COL",
8    "callingCodes": [
9      "57"
10   ],
11   "capital": "Bogotá",
12   "altSpellings": [
13     "CO",
14     "Republic of Colombia",
15     "República de Colombia"
16   ],
17   "region": "South America",
18   "continent": "Americas",
19   "population": 48759958,
20   "latlng": [
21     4.0,
22     -72.0
23   ]
24 }
```

What is TabPy?

TabPy server



```
New Station Name
```

Results are computed along Table (across).

```
SCRIPT_STR (  
"return [x.swapcase() for x in _arg1]"  
, ATTR([Station Name]))
```

Calculated field in your Tableau workbook



Script step in your Tableau Prep flow

SCRIPT functions in Tableau

SCRIPT_INT

Returns integer values

SCRIPT_REAL

Returns float values

SCRIPT_STR

Returns string values

SCRIPT_BOOL

Returns boolean values

Writing a **SCRIPT** function

```
Capital
```

Results are computed along Table (across).

```
SCRIPT_STR('
import requests

country = _arg1

url = f"https://restcountries.com/v3/name/{country}"

response = requests.get(url)
response = response.json()
country_info = response[0]
capital = country_info["capital"][0]

return capital
', ATTR([Selected country])
)
```

The calculation is valid.

Default Table Calculation

Apply OK

Let's build our dashboard!

Selected country

United Kingdom

Capital

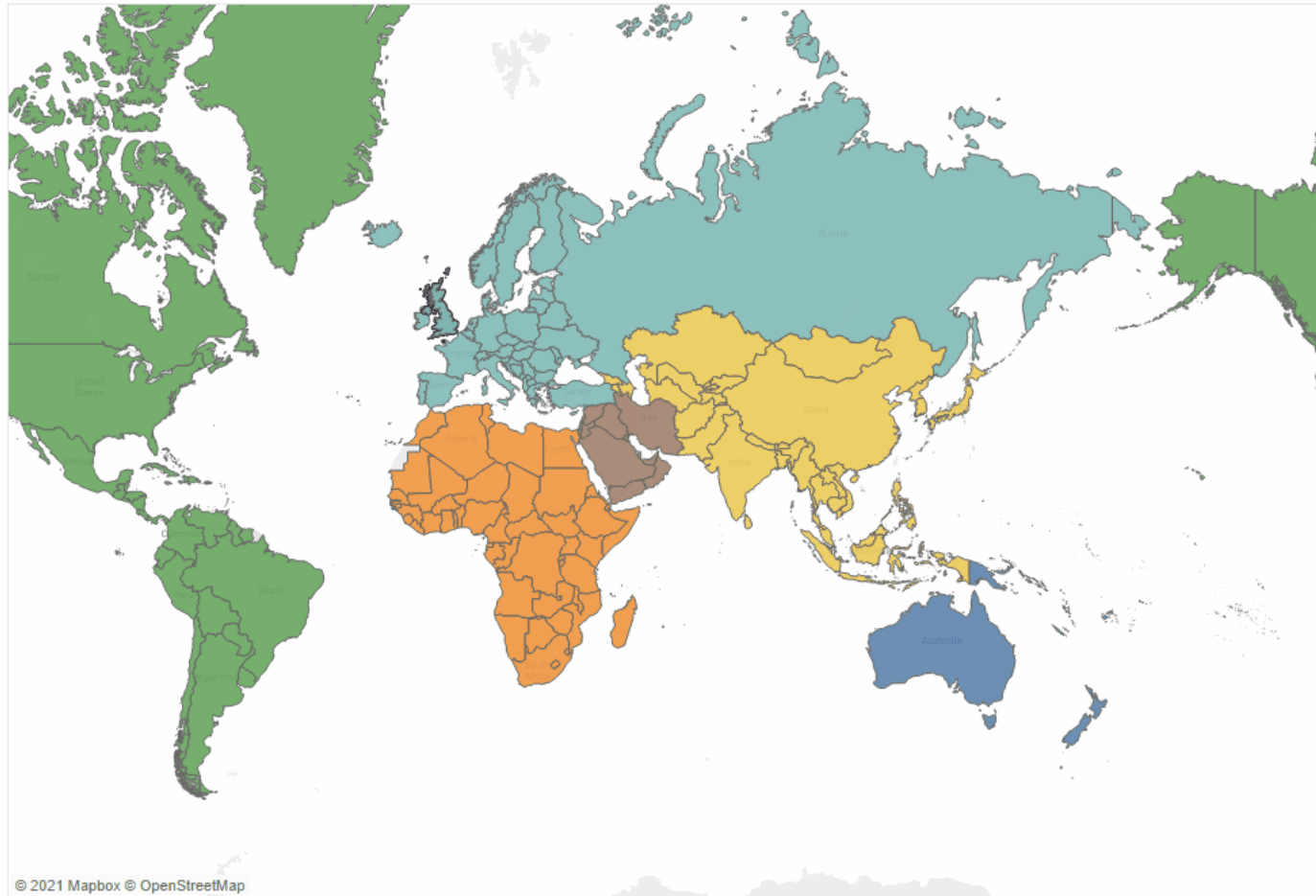
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Learn more about integrating Tableau & Python



Read TabPy documentation
github.com/tableau/TabPy



Read about TabPy configuration and security
tabscifi.golovatyι.info/



Learn more about data science in Tableau Desktop
www.tableau.com/about/blog/2018/8/working-external-services-tableau-tabpy-r-matlab-93351



Explore practical examples
www.tableau.com/about/blog/2017/1/building-advanced-analytics-applications-tabpy-64916



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