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Do Look Up! Asteroid Gazing with Tableau's Table Extensions

Anya Prosvetova

Tableau Visionary & DataDev Ambassador

@Anyalitica | prosvetova.com

What are Analytics Extensions in Tableau?

Available on:
Tableau Desktop (Tableau Server & Online)
Tableau Prep (Tableau Server only)

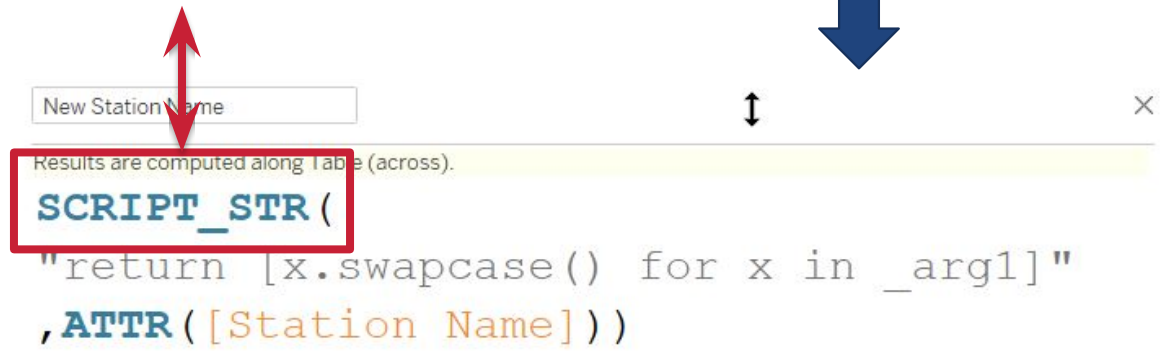
Dependencies:
TabPy / R Serve

SCRIPT_BOOL
SCRIPT_INT
SCRIPT_REAL
SCRIPT_STR

Pass Python or
R scripts & data

Output Data

Rserve



Before Tableau 2022.3: Script Calculations

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])

)
```

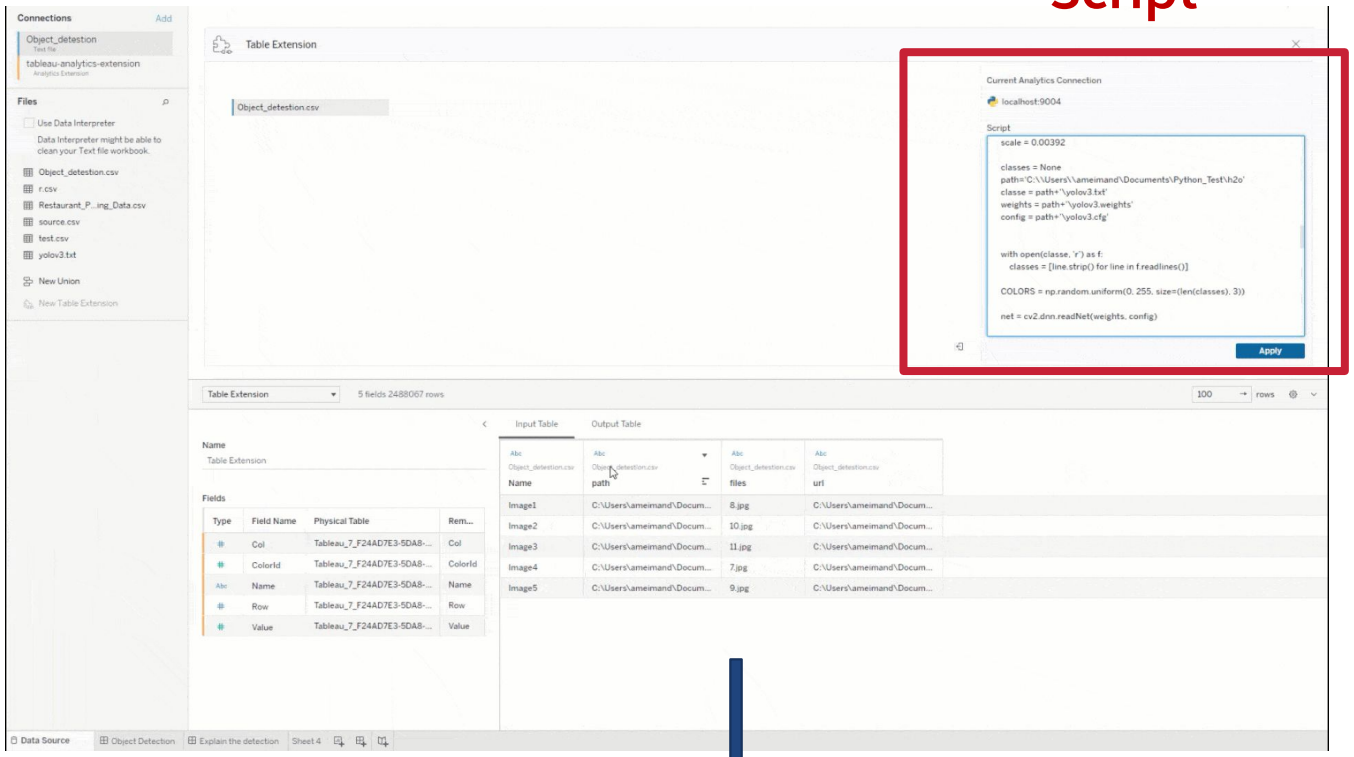
The calculation is valid.

From Tableau 2022.3: Table Extensions

Available on:
Tableau Desktop (Tableau Server & Online)

Dependencies:
TabPy / R Serve

Input Data



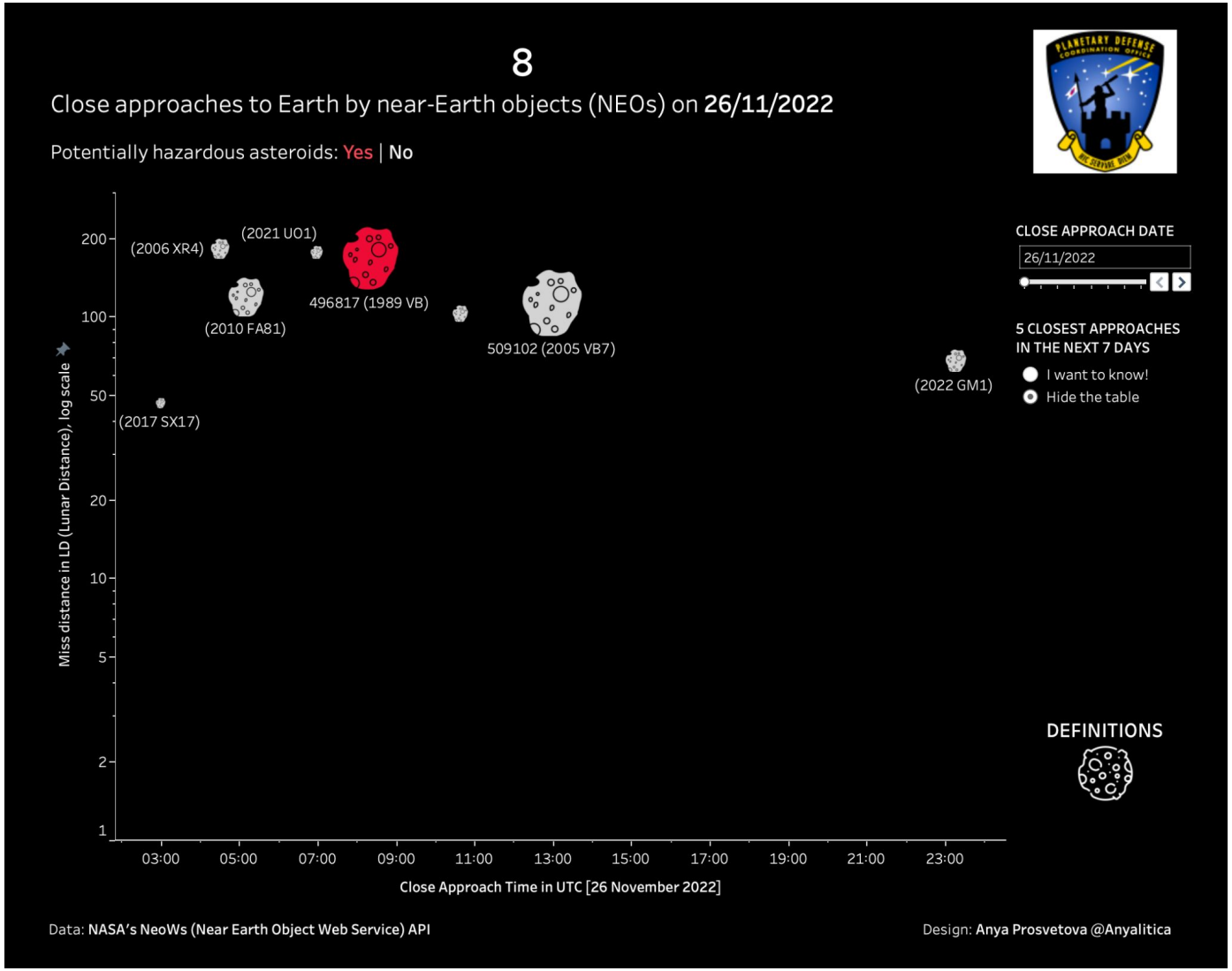
New datasource

Pass Python or R scripts and data

Output Data

Rserve

Demo: Tracking asteroids with Tableau and NASA APIs



Data: NASA's NeoWs (Near Earth Object Web Service) API (https://api.nasa.gov/)

Demo: Tracking asteroids with Tableau and NASA APIs

Response from the API comes in a JSON format, that needs to be parsed to get a structured table with required values.

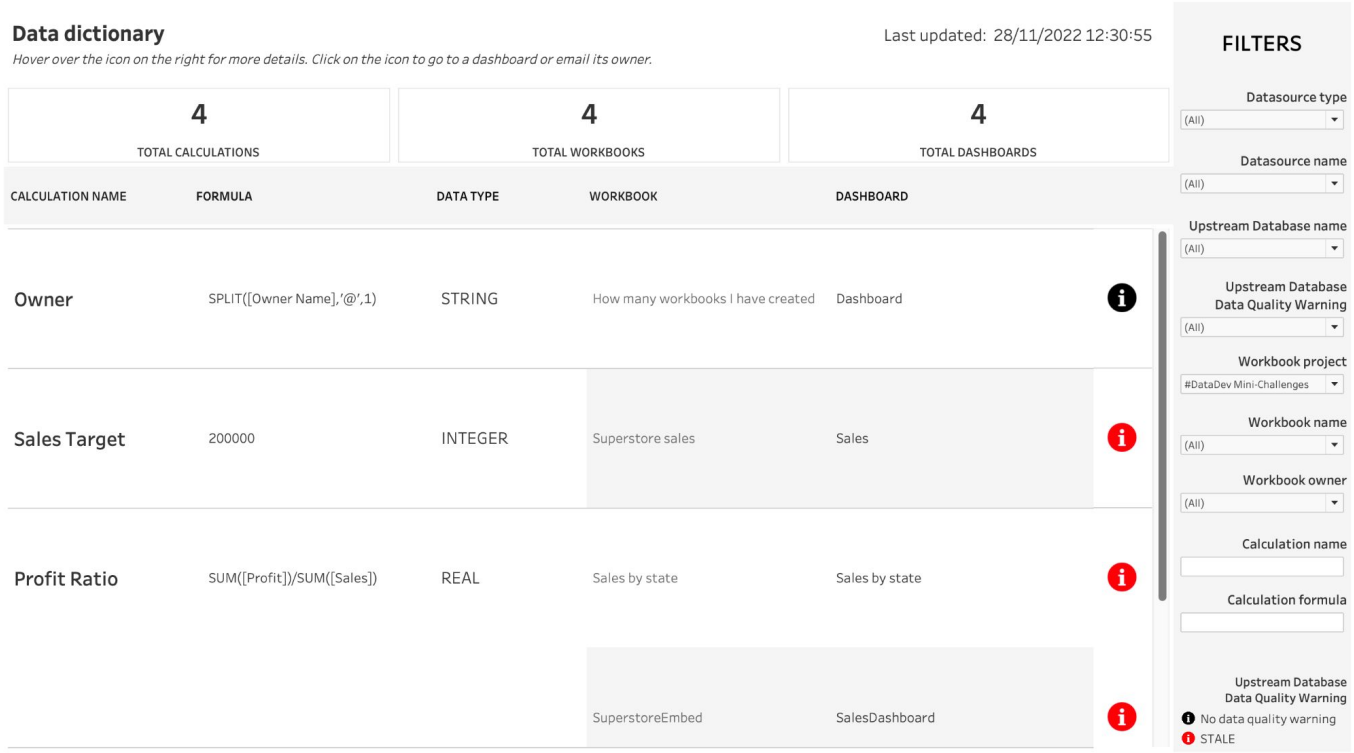
[See how it's done in Python]


```
},
"element_count":67,
"near_earth_objects":{
   "2022-11-26":[
      {
         "links":{
            "self":"http://api.nasa.gov/neo/rest/v1/neo/2496817?api_key=S5e
         },
         "id":"2496817",
         "neo_reference_id":"2496817",
         "name":"496817 (1989 VB)",
         "nasa_jpl_url":"http://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2496817",
         "absolute_magnitude_h":19.9,
         "estimated_diameter":{
            "kilometers":{
               "estimated_diameter_min":0.2783267681,
               "estimated_diameter_max":0.6223575734
            },
            "meters":{
               "estimated_diameter_min":278.3267680719,
               "estimated_diameter_max":622.3575733667
            },
```


Data: NASA's NeoWs (Near Earth Object Web Service) API (https://api.nasa.gov/)

Potential use cases

- Tableau Server monitoring tools using Tableau's APIs
  - Data Dictionary with Metadata API
- Tracking dashboards and automation of notifications
- POC creation with new data sources



Data dictionary

Last updated: 28/11/2022 12:30:55

Hover over the icon on the right for more details. Click on the icon to go to a dashboard or email its owner.

4 TOTAL CALCULATIONS	4 TOTAL WORKBOOKS	4 TOTAL DASHBOARDS

CALCULATION NAME	FORMULA	DATA TYPE	WORKBOOK	DASHBOARD	
Owner	SPLIT([Owner Name],'@',1)	STRING	How many workbooks I have created	Dashboard	ℹ
Sales Target	200000	INTEGER	Superstore sales	Sales	ℹ
Profit Ratio	SUM([Profit])/SUM([Sales])	REAL	Sales by state	Sales by state	ℹ
			SuperstoreEmbed	SalesDashboard	ℹ

FILTERS

Datasource type (All)

Datasource name (All)

Upstream Database name (All)

Upstream Database Data Quality Warning (All)

Workbook project #DataDev Mini-Challenges

Workbook name (All)

Workbook owner (All)

Calculation name

Calculation formula

Upstream Database Data Quality Warning

ℹ No data quality warning

ℹ STALE

Useful resources

Read TabPy documentation

github.com/tableau/TabPy

Read about TabPy configuration and security

tabscifi.golovatyi.info/

Learn more about data science in Tableau Desktop

www.tableau.com/about/blog/2018/8/working-external-services-tableau-tabpy-r-matlab-93351
www.tableau.com/about/blog/2017/1/building-advanced-analytics-applications-tabpy-64916

Watch videos from Tim Ngwena (aka Tableau Tim) & Amir Meimand

https://www.youtube.com/watch?v=ATR8WVp9ovo
https://www.youtube.com/watch?v=zErOzr-qUPk

Join Tableau Developer Program

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Thank You

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