WORLD FOOD AND ECOSYSTEMS practical 3

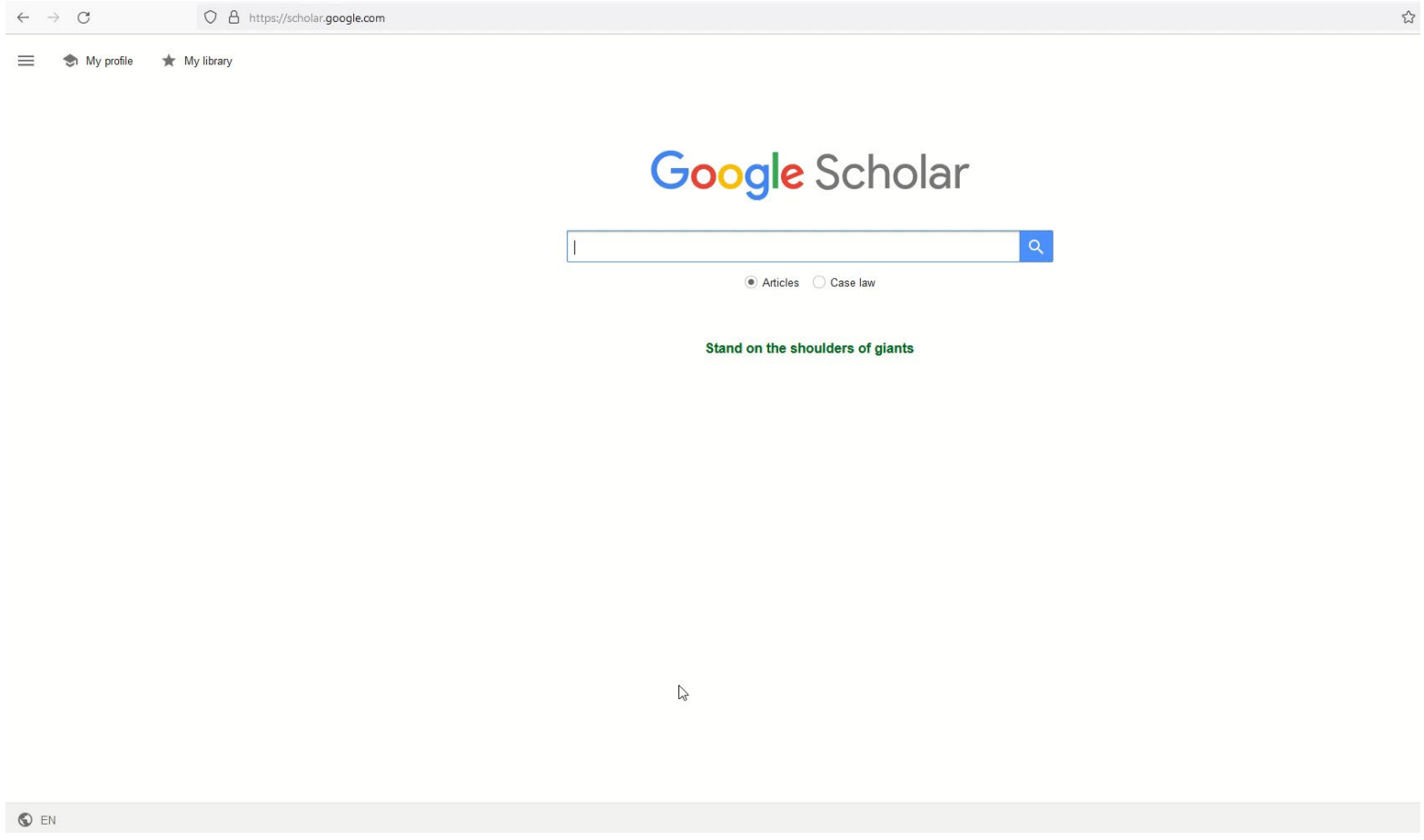
BSC Future Planet Studies
Ac. Year 2021-2022

What were we doing again?

- Learning how to use different (command-line-based) tools to analyse big spatial databases
- Why? Because command-line-based tools allow repetition, (parallel) processing, and automatic data retrieval…

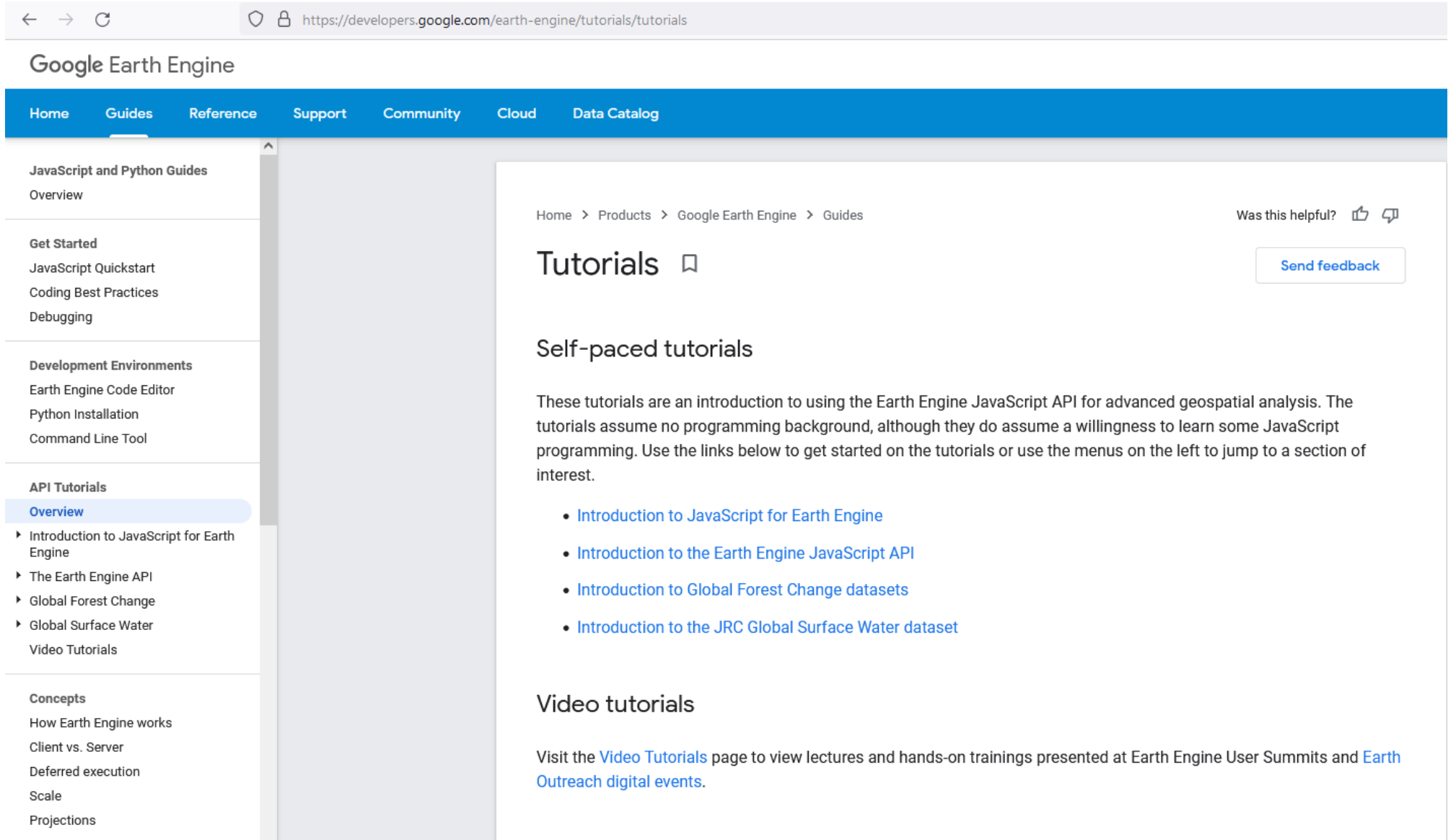
Never seen an API?

“Weather Amsterdam”



Google’s weather API knows the input convention ‘Weather + location’ and uses this to communicate with 3rd party weather data provider, and summarizes the data

Never seen an API?



Previously in the practicals of WFE (1)

Visualizing raster and vector data

Building plots (data visualisation)

Downloading raw data

Previously in the practicals of WFE (2)

Downloading/Accessing data

OFFLINE

QGIS

Visualizing and executing simple functions (point and click)

RStudio®

Data processing/regression

This Course (3)

ONLINE

RStudio

QGIS

→ Exploring and extracting data (through APIs)

QGIS → Geographic data visualisation

RStudio → Post-processing and data visualisation

Case : what is the typical raccoon habitat in Belgium

Simplify / structure the problem

Buiding Block	Decision
Geographic scale	Regular grids – small enough to capture relevant habitat changes
Temporal scale	All data should span same timespan. Raccoon is only recent phenomenon in Belgium, so we focus on occurrences >2015
Assumption	Human “opportunistic” observations of raccoon over the past years are of sufficient quality and can be linked to biophysical conditions
Dimensions	Based on literature of similar cases in Italy [references ommitted here], we focus on (i) topograph and (ii) the presence of water
Dimension description	(i) Topographic diversity, (ii) river network as provided by OSM

Data structures and sources

Dataset	Type	Source	Access
Raccoon sightings	Vector: points	GBIF	GBIF API in R
River network	Vector: lines	OSM	OSM API in QGIS
TPI	Raster	Derived from SRTM DEM	Google Earth Engine
Boundary of Belgium	Vector: polygon	OSM	OSM API in QGIS