Practical Introduction into Programming in Python
Exercise 3
Using an API
WiSe 2024

Topic:

In this exercise, you should explore the **Federal Register** API using its documentation. The Office of the Federal Register (OFR) of the National Archives and Records Administration (NARA), and the U.S. Government Publishing Office (GPO) developed the website to make it easier for citizens and communities to understand the regulatory process and to participate in Government decision-making (in the USA). The Federal Register API documentation can be found here:
https://www.federalregister.gov/developers/documentation/api/v1/.

Task 1: Write a function to extract presidential document information

Use the Federal Register API to write a function to extract information on the X*th* **presidential** document in a specific time period: title, and three more characteristics of the document. The function should take a start and end date of the time period (string format), and a number (X*th* document in specific time period, integer format) as input and return the following information: number (X*th* document), title, and three more characteristics.

Task 2: Extract document data

Use the function of Task 1 to extract the data of the first 20 **presidential** documents for the time period 01.12.2010-31.12.2010. Store the data into a data frame (with the number, the title and its further characteristics in five columns). Print this data frame and save it in an Excel or CSV file.

Hint: You can find the endpoint parameters, example responses and example URLs by using the "Try it out" button within the individual endpoints in the documentation.

Expectations:

Hand in your Python/ Jupyter Notebook file with **the code and the Excel/CSV file** with the results until Jan 14, 2025, 11:59 pm CET. See further information on the evaluation horizon on the next page.

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Evaluation horizon

The exercise is passed and will be graded with a 4.0 when at least 10 out of 20 points are achieved. Points can be achieved by making a valid GET request, writing the required function, extracting document information, and storing the data correctly, as described in the exercise sheet. The requested features and the assigned points are shown in the following table.

Implemented feature	Points
Making a GET request that is valid. It has to include an endpoint, two dates, and the type "PRESDOCU".	5
Writing a function that takes a start date and end date of a time period, and a number as input and returns the number and all extracted characteristics.	4
The four characteristics must be extracted using the API inside of the function.	4
Information on 20 documents in the given time period has to be extracted.	2
The information has to be extracted using the function.	2
Saving the data in a data frame and displaying it.	2
The data is saved in an Excel or CSV file.	1

Distribution of Grades

The distribution of grades based on the achieved points is shown in the following table.

Grade	⩾ ... points
1	19
1.3	18
1.7	17
2	16
2.3	15
2.7	14
3	13
3.3	12
3.7	11
4	10
5	0

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