VU Programming Cartographic Tasks / Programmieren Kartographischer Aufgaben 2015S

Assignment 1, due Friday, April 17 2015

Convert data from Excel to CSV

Write a Python script that reads in the supplied file **`assignment01.xslx`** and converts it into a file named **`places.csv`**. Unfortunately, the data has been damaged by a previous conversion process, so the latitude/longitude values have been mixed into a single column that you need to separate again.

The script and result must meet the following criteria:

- The script must run error-free.
- The script must be named **`PCT01_<Matrikelnummer>.py`**, where <Matrikelnummer> is your Matrikelnummer (Student ID #), e.g. **`PCT01_12123456.py`**
- The output file must use the comma-separated CSV format as discussed in lecture 3. The first row must contain a list of field names for the columns.
- Values in integer columns must be output as integers (without decimal digits).
- Values in string columns must be correctly encoded in UTF-8.
- The last column – currently formatted like **`"lat:48.2N;lon:16.4E"`** – must be parsed into two separate columns **`lat`** and **`lng`** containing latitude and longitude as float values. (You don't need to take the sign of the coordinates into account since all of them are positive (north/east))
- The result file must only contain rows for places in Lower Austria (Niederösterreich) (all ISO codes starting with "3"). Filter the data accordingly.

You are allowed to:

- Use the **xlrd** and **csv** libraries.
- Use Python language features we have not discussed yet.

You are <u>not</u> allowed to:

- Use any other modules/libraries, neither from the standard library nor from external sources.
- Copy code from anywhere. All code has to be typed in by you.
- Create more than 1 script file or a library/module.

You are encouraged to:

- Structure your code to encourage clarity and re-use.
- Name functions and variables according to your taste and needs.
- Use language features we have not discussed yet.

Grading will be based on the script meeting the above criteria. You need to understand the code you submit and may be asked about its details at a future lab interview. Bonus points may be awarded for structuring your code to facilitate re-use and modularization.

Submit your script in TUWEL using the assignment submission module. Do not submit the converted `places.csv`, but only your python script!

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