ADS1 exercises – Pandas and PEP-8

Note: Spyder reads and writes files from/into the folder containing the program code. This default can be changed, using the Preferences menu, but the default is usually convenient.

Many of you will already be aware that the lecture notes contain blueprints for your practical work.

1. The csv file `countries_top10.csv` contains information on the population, area (in km^2) and GDP (in dollars) for the ten most populous countries.

   (a) Read the file into a pandas dataframe.

   (b) Calculate new columns with the population per km^2 and the GDP per head. Write the dataframe into an excel file.

2. The csv file `GDP_2015dollars.csv` contains historical GDP data (in inflation corrected dollars) of the top four economies.

   (a) Read the file into a dataframe.

   (b) Produce a plot containing all four time series. Include a legend identifying the countries. And label the axes, of course.

   (c) Create new columns by dividing the GDP of China, Germany, Japan by the GDP of the USA, convert into percent. Plot these values as function of time.

   (d) Extract and print data for the years 2011 to 2020.