

# Advanced Python: Homework set 9

2023/2024

One of the most frequently discussed topics in the media is inflation or skyrocketing prices. To evaluate this trend yourself, it is worth comparing the various indicators available from the past. Write a program that will take the selected data and use matplotlib to plot them on the charts. Details:

1. The program should retrieve data from at least two sources encompassing two consecutive calendar years (e.g. 2021 and 2022);
2. data for the same year should be presented on the same graph, with subsequent months on the x-axis. If the data is more detailed (e.g. daily) calculate the monthly average and place it on the chart;
3. propose and program an algorithm for predicting the future values of the analyzed indicators for the next year. Present the calculated annual forecast in the third chart. Additionally, you can compare your forecast with actual data, if available (this is not mandatory).

Additional requirements:

- all graphs should be in one picture (just like in the lecture there were times when this Fibonacci number was calculated);
- take care of the description of charts and axes;
- if downloading data requires a secret (password, key, etc.) on SKOS send the implementation without a secret, but if possible attach previously downloaded data files.

Example data sources:

- inflation data provided by the Central Statistical Office: <https://stat.gov.pl>;
- Brent oil price on Investing.com: <https://investing.com>;
- currency rates tables of the National Bank of Poland: <https://api.nbp.pl>;
- cryptocurrency rates on the Blockchain portal: <https://www.blockchain.com/explorer/charts/api>.

Other data sources can be used to complete the task, not necessarily the ones mentioned above, for example <https://strefainwestorow.pl/artykuly/20180108/dane-makroekonomiczne-za-darmo> You can receive up to 6 points for this task.